Air Quality and Greenhouse Gas Emissions Technical Report

Big Rock 2 Cluster Solar & Storage Project

Imperial County, California
April 2025

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1 Introduction

The Air Quality and Greenhouse Gas Emissions Technical Report (Technical Report) assesses the construction and operation of the proposed Big Rock 2 Cluster Solar and Storage Project (Project), a utility-scale photovoltaic (PV) solar energy generation and battery energy storage system (BESS) facility. The report was prepared for 90FI 8me LLC (Applicant) and prepared in accordance with the requirements under the California Environmental Quality Act (CEQA).

2 Project Location

The Project is located in unincorporated Imperial County, south of Interstate 8, approximately one mile southwest of the town of Seeley, California, and approximately six miles north of the United States International Border with Mexico. The Project would sit on approximately 1,849 acres of land. Figure 1 shows the regional location of the Project.

The Project area is relatively flat, consisting primarily of fields and unpaved roads. All of the Project parcels have been extensively cleared, plowed, and maintained for agricultural production. Current land use of the Project area includes cropland, dryland grain crops, and irrigated grain and hayfields, row crops, orchards, and pastureland.

The Project is adjacent and proximal to both agricultural and rural lands that have been rezoned for renewable energy (RE), specifically for PV solar and BESS projects that have been approved by Imperial County. Nearby land uses are predominantly agricultural and/or renewable energy generation, but also include commercial, transportation, military, and electric utility uses. Commercial land uses include the Rio Bend Golf Course (and associated Specific Plan Area) to the east of the Project. The Interstate 8 and Union Pacific Railroad transportation corridors are located to the north of the Project. To the south of the Project, utility land uses include the San Diego Gas and Electric (SDG&E) Imperial Valley Substation, as well as additional agricultural lands that have been designated for PV solar, and BESS renewable energy projects.

3 Project Description

The Project applicant is seeking approval of four Conditional Use Permits (CUPs) associated with the construction and operation of a utility-scale PV solar energy generation and BESS facility on approximately 1,849 acres of privately-owned land in the unincorporated area of Imperial County, California. The Project contemplates utilizing approximately 1,569 acres of land that has not previously been entitled for solar development, as well as 280 acres of land that was previously entitled under active CUPs known as Laurel Cluster 2 North (120 acres), and Laurel Cluster 2 South (160 acres). The Laurel Cluster 2 North and Laurel Cluster 2 South will be re-entitled as part of the Project. The four CUP applications or individual site locations consists of the following:

- Big Rock 2 Cluster North: CUP 24-0006
- Big Rock 2 Cluster South: CUP 24-007
- Big Rock 2 Cluster East/Laurel Cluster South (herein referred to as Big Rock Cluster East): CUP 24-0008
- Big Rock 2 Cluster West: CUP 24-0009

The Project consists of three primary components: 1) solar energy generation equipment and associated facilities including a substation and access roads; 2) BESS; and, 3) gen-tie line that would connect the proposed on-site substation to the point of interconnection at the Imperial Irrigation District's (IID) existing Liebert Switchyard. The solar energy facility, BESS and gen-tie are collectively referred to as the "project." The Project's 230kV step-up substation would connect to the 230kV Liebert Switchyard/Sub-station via one of the proposed gen-tie line alternatives (Figure 2). The proposed gen-tie line alignment would extend approximately 0.62 miles from the southeast corner of the Big Rock 2 Cluster South site then heads east to the Liebert Switchyard. The alternative gen-tie line alignment would extend approximately 2.04 miles from the south-central portion of the Big Rock 2 Cluster North site then heads south to the Liebert Switchyard. Figure 2 depicts the proposed site plan.

Figure 1. Regional Location

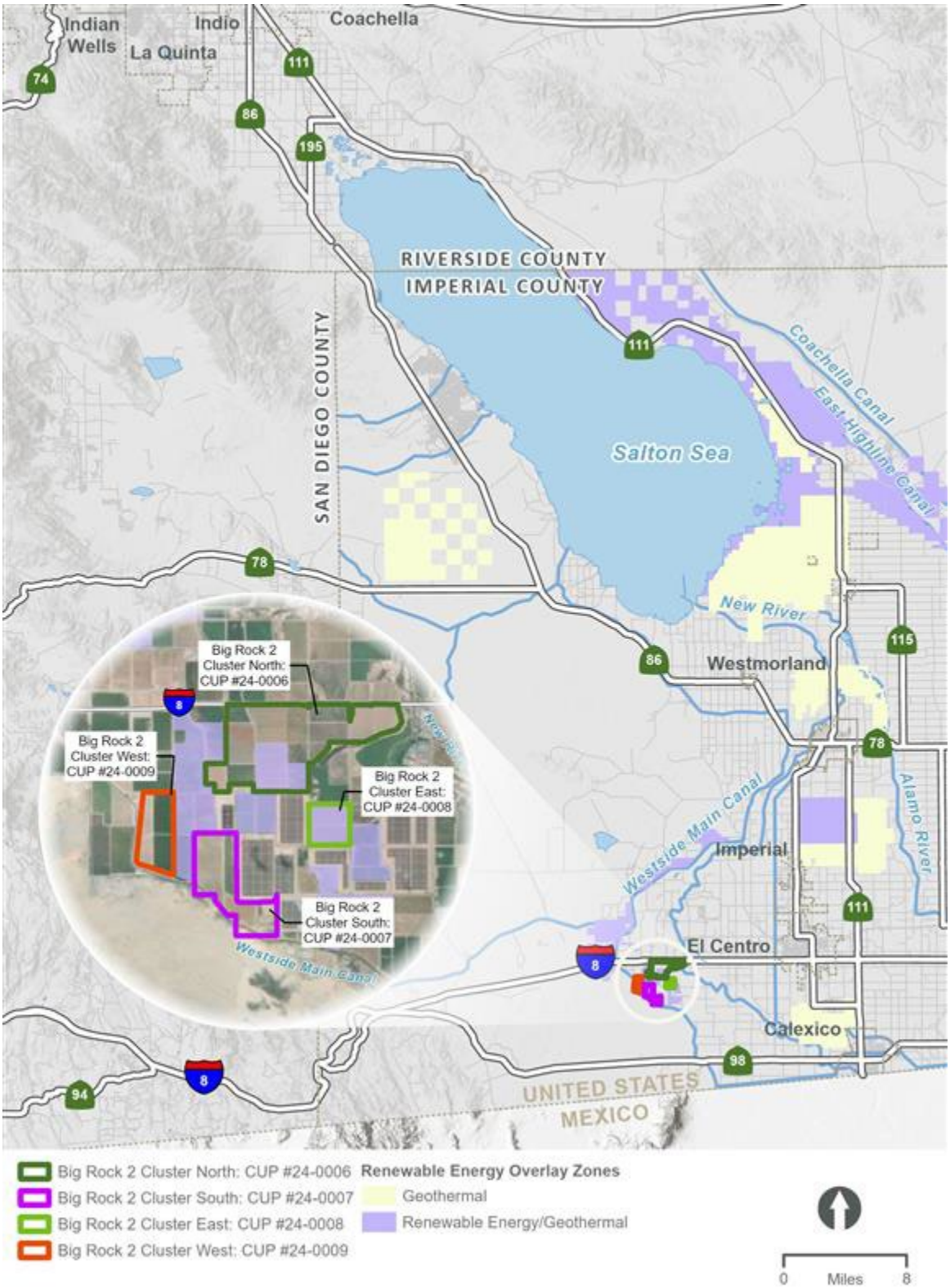
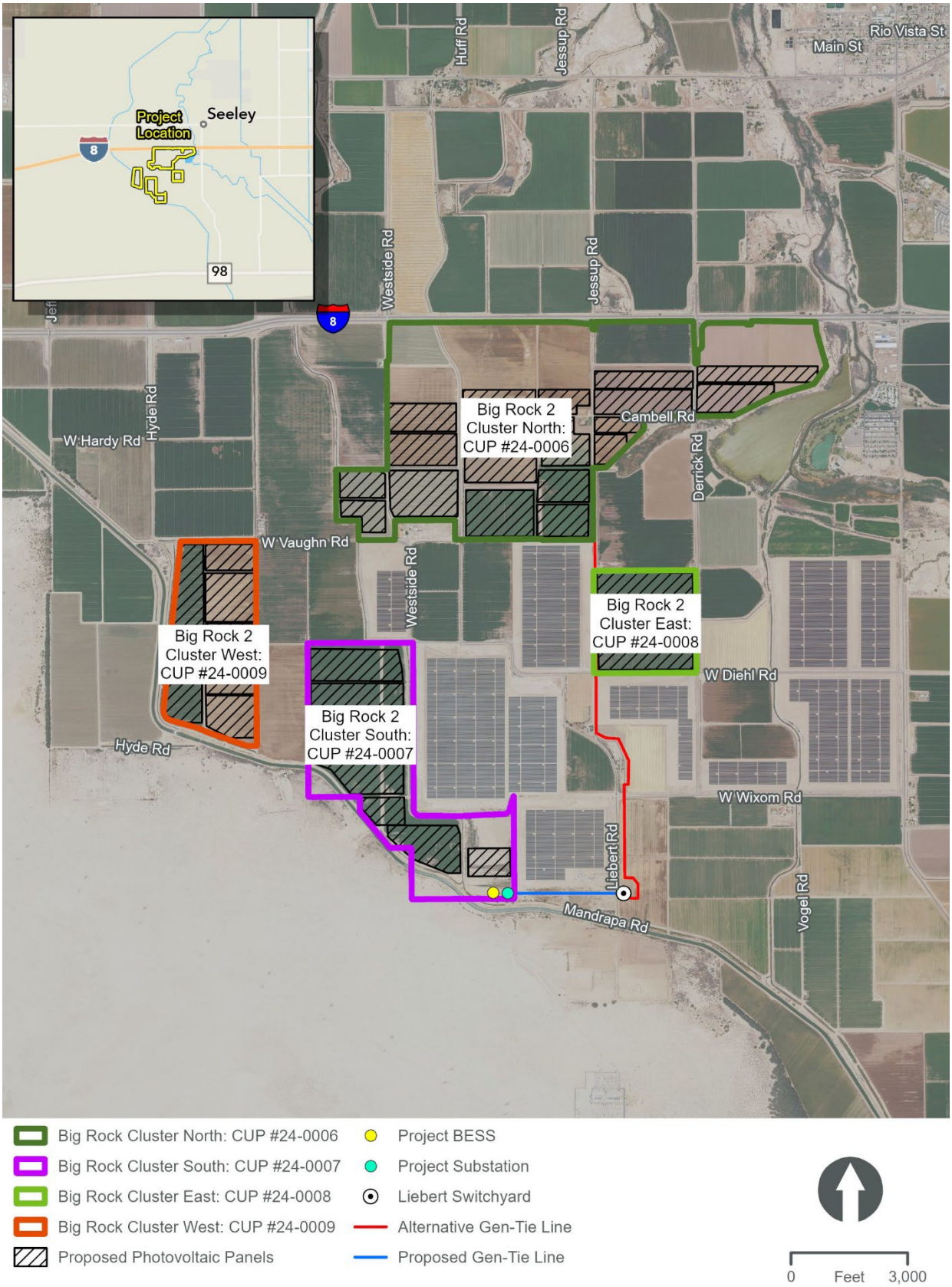


Figure 2. Proposed Site Plan



3.1 Construction Activities

For purposes of estimating Project emissions, and based on information provided by the applicant, it is assumed that construction of the Project would commence in April 2026 and would last approximately 24 months, ending in October 2027.

Construction is anticipated to occur 6 days a week, 8 hours a day. No weekend or nighttime construction would be required for the Project. Construction activities for construction phases are further described below.

- Phase 1 – Construction activities for Phase 1 of Project would site preparation, fencing and ingress/egress.
- Phase 2 – Construction activities for Phase 2 of the Project include civil improvements such as grading, roads, and earthwork activities.
- Phase 3 – Construction activities include PV panel and BESS construction.
- Phase 4 – Construction activities include testing and commissioning activities.
- Phase 5 – Construction activities include decommissioning and reclamation of the Project site.

Equipment used during construction would include but not limited to diesel-powered graders, loaders, scrapers, plate compactors, and forklifts. A full list of construction equipment is available in Appendix B. Soil would be balanced on site with minimal export proposed.

3.2 Operational Activities

Once constructed, maintenance of the PV solar and BESS facility would generally be limited to cleaning PV panels, monitoring, site security, and periodic maintenance. It is assumed the Project would share O&M, substation, and/or transmission facilities with other adjacent PV solar and BESS projects that have been approved and entitled by Imperial County, or with any future nearby proposed renewable energy projects. The facility would operate 24/7 with potentially 4 to 10 full-time employees at any given time. Any required planned maintenance activities would generally consist of equipment inspection and replacement and would be scheduled to avoid peak load periods. Any unplanned maintenance would be responded to as needed, depending on the event. There are no expected stationary emission sources (i.e. emergency generators).

4 Regulatory Setting

4.1 Regulations

4.1.1 Federal

Clean Air Act and National Ambient Air Quality Standards

The Clean Air Act (CAA) is the primary federal law governing air quality. The CAA is regulated by the United States Environmental Protection Agency (USEPA), which sets standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS have been established for six criteria air pollutants that have been linked to potential health concerns: ozone (O_3), coarse particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). Additionally, national standards exist for lead (Pb). The NAAQS are set at levels that protect public health with a margin of safety and are subject to periodic review and revision. Characteristics and possible health and environmental effects of each criteria air pollutant can be found in Appendix A. The federal regulatory schemes also cover TACs.

The CAA requires USEPA to designate areas as attainment, nonattainment, or maintenance (an area that was previously nonattainment and is currently attainment) for each criteria pollutant based on whether the NAAQS have been achieved. The federal standards are summarized in Table 1.

The CAA requires each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). USEPA is responsible for implementing the programs established under the CAA, programs such as establishing and reviewing the federal ambient air quality standards and judging the adequacy of SIPs. If a state contains areas that violate the national standards, the CAA requires the State to revise its SIP to incorporate additional control measures to reduce air pollution. USEPA has authorized states such as California with air programs that meet or exceed federal standards to implement many of the federal programs while retaining an oversight role.

Table 1. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	National Standards[1]		California Standards[2]
		Primary[3]	Secondary[4]	
O_3	1 hour	-	Same as Primary Standard	0.09 ppm
	8 hour	0.07 ppm		0.07 ppm
PM_{10}	24 hour	150 µg/m^3	Same as Primary Standard	50 µg/m^3
	Annual	-		20 µg/m^3
$PM_{2.5}$	24 hour	35 µg/m^3	Same as Primary Standard	-
	Annual Arithmetic Mean	12 µg/m^3	15 µg/m^3	12 µg/m^3
CO	1 hour	35 ppm	-	20 ppm
	8 hour	9 ppm	-	9 ppm
	8 hour (Lake Tahoe)	-	-	6 ppm
NO_2	1 hour	100 ppb	-	0.18 ppm
	Annual Arithmetic Mean	0.053 ppm	Same as Primary Standard	0.03 ppm
SO_2	1 hour	75 ppb	-	0.25 ppm
	3 hour	-	0.5 ppm	-
	24 hour	0.14 ppm	-	0.04 ppm
	Annual Arithmetic Mean	0.03 ppm	-	-
Pb	30-day Average	-	-	1.5 µg/m^3
	Calendar Quarter	1.5 µg/m^3	Same as Primary Standard	-
	Rolling 3-month Average	0.15 µg/m^3		-

Table 1. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	National Standards[1]		California Standards[2]
		Primary[3]	Secondary[4]	
Visibility Reducing Particles	8 hour	No National Standards		-[5]
Sulfates	24 hour	No National Standards		25 µg/m^3
Hydrogen Sulfide	1 hour	No National Standards		0.03 ppm
Vinyl Chloride	24 hour	No National Standards		0.01 ppm

Source: CARB 2016
Notes:
[1] National standards (other than O3, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98% of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the USEPA for further clarification and current national policies.
[2] California standards for O3, CO (except 8-hour Lake Tahoe), SO2 (1 and 24 hour), NO2, and particulate matter (PM10, PM2.5, 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.
[3] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
[4] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
[5] In 1989, the CARB 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.
O3 = ozone; PM10 = particles of 10 micrometers and smaller; PM2.5 = particles of 2.5 micrometers and smaller; CO = carbon monoxide; NO2 = nitrogen dioxide; SO2 = sulfur dioxide; Pb = lead; ppm = parts per million; µg/m3 = micrograms per cubic meter; ppb = parts per billion

Emission Standards for Non-Road Diesel Engines

The USEPA has adopted multiple tiers of emission standards for non-road (or off-road) diesel engines. The non-road standards cover mobile non-road diesel engines of all sizes used in a wide range of construction, agricultural and industrial equipment. The first federal standards, Tier 1, were adopted in 1994. Tier 2 standards were adopted in 2001, Tier 3 in 2006, and final Tier 4 standards in 2014. The federal emission standards for non-road diesel engines are established in advancing tiers that progressively become more stringent (i.e., the higher the tier, the lower the emissions). Currently, the most stringent is Tier 4. The Tier 4 emissions standards have more stringent NO_X, particulate matter, and hydrocarbon limits than the lower tiers. The CO emission limits for Tier 4 standards remain unchanged from the Tier 2 and Tier 3 standards.

On-Road Diesel Fuel Rule

On December 20, 2022, USEPA adopted the *Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards* (USEPA 2024a) that set stronger emissions standards to lower emissions of NO_X, CO, and $PM_{2.5}$ from heavy-duty vehicles and engines starting in model year 2027. Under this rule, NO_X emissions from heavy-duty vehicles would be reduced by 44 percent in 2040 and by 48 percent in 2045. $PM_{2.5}$ emissions from heavy-duty vehicles are estimated to decrease by 7 percent in 2040 and by 8 percent in 2045. Emissions of CO from heavy-duty vehicles are estimated to decrease by 16 percent in 2040 and by 18 percent in 2045 (USEPA 2024a).

Endangerment Finding for Greenhouse Gases

On April 2, 2007, in *Massachusetts v. Environmental Protection Agency*, 549 U.S. 497, the U.S. Supreme Court found that GHGs are air pollutants covered by the CAA. The Supreme Court held that USEPA must determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. To regulate GHGs from passenger vehicles, the USEPA issued an endangerment finding on December 7, 2009. The finding identifies emissions of six key pollutants GHGs — CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6 — that threaten the public health and welfare of current and future generations (USEPA 2024b).

Mandatory Reporting of Greenhouse Gases Rule

On September 22, 2009, the USEPA issued a final rule for the mandatory reporting of GHG data and other relevant information from large sources in the United States (Code of Federal Regulations Title 40, Part 98). This comprehensive, nationwide emissions data is intended to provide a better understanding of the sources of GHGs and guide development of policies and programs to reduce emissions. The mandatory reporting rule applies to direct GHG emitting sources; suppliers of fossil fuel, industrial gas, and other products that would result in GHG emissions if released, combusted, or oxidized; and facilities that inject carbon dioxide underground for geologic sequestration or other reasons. In general, facilities that emit 25,000 metric tons of carbon dioxide equivalent ($MTCO_2e$) or more per year of GHGs are required to submit annual reports to the USEPA.

Corporate Average Fuel Economy Standards

The Corporate Average Fuel Economy (CAFE) standards were first introduced by Congress in 1975 to help reduce the country's dependence on foreign oil. CAFE standards are regulated by Department of Transportation's National Highway Traffic and Safety Administration (NHTSA). NHTSA sets and enforces the CAFE standards, while the USEPA calculates average fuel economy levels for

manufacturers, and also sets related GHG standards. The regulations have become more stringent over time. The regulations at first applied only to passenger cars in 1978, then included light duty trucks up to 6,000 pounds in 1980, and finally increased to all vehicles up to 8,500 pounds the next year. Regulations varied during the 1980s for both cars and trucks before reaching a steady target for cars in 1990 through 2010, with trucks moderately increasing during the period from 20 to 21 miles per gallon (mpg) through 2005, then reaching 23.5 mpg by 2010.

On April 1, 2010, the USEPA and the NHTSA announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States. This rule required passenger cars, light-duty trucks, and medium-duty passenger vehicles to meet fuel economy standards. In 2011, the USEPA and NHTSA issued a final rule for the first national standards to improve fuel efficiency of medium- and heavy-duty trucks and buses.

In 2020, the USEPA and NHTSA, issued the Safer Affordable Fuel Efficient (SAFE) Vehicles Rule which set new CAFE targets and tailpipe CO_2 emissions standards for passenger cars and lights trucks that increase 1.5 percent in stringency each year from model years 2021 through 2026. In 2021, President Biden signed an executive order (EO) directing the government to revise fuel economy standards, with the goal of further reducing emissions. NHTSA finalized the CAFE Standards for model years 2024-2026 (NHTSA 2023) in 2022. The final rule establishes standards that would require an industry-wide fleet average of approximately 49 mpg for passenger cars and light trucks in model year 2026 (NHTSA 2023). NHTSA projects the standards will cut greenhouse gases from the atmosphere, reduce air pollution, and reduce the country's dependence on oil (NHTSA 2023).

On July 28, 2023, NHTSA announced a proposal for new CAFE standards for passenger cars and light trucks built in model years 2027-2032, and new fuel efficiency standards for heavy-duty pickup trucks and vans built in model years 2030-2035. If finalized, the proposal would require an industry fleet-wide average of approximately 58 miles per gallon for passenger cars and light trucks in MY 2032, by increasing fuel economy by 2 percent year over year for passenger cars and by 4 percent year over year for light trucks. For heavy-duty pickup trucks and vans, the proposal would increase fuel efficiency by 10 percent year over year (NHTSA 2023).

Executive Order 13990

EO 13990: Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis was signed by President Biden on January 20, 2021. EO 13990 directs federal agencies to immediately review, and take action to address, federal regulations promulgated and other actions taken during the last 4 years that conflict with national objectives to improve public health and the environment; ensure access to clean air and water; limit exposure to dangerous chemicals and pesticides; hold polluters accountable, including those who disproportionately harm communities of

color and low-income communities; reduce greenhouse gas emissions; bolster resilience to the impacts of climate change; restore and expand our national treasures and monuments; and prioritize both environmental justice and employment (White House 2021a).

Executive Order 14008

EO 14008: Tackling the Climate Crisis at Home and Abroad was signed by President Biden on January 27, 2021. EO 14008 establishes a "government-wide approach that reduces climate pollution in every sector of the economy; increases resilience to the impacts of climate change; protects public health; conserves our lands, waters, and biodiversity; delivers environmental justice; and spurs well-paying union jobs and economic growth, especially through innovation, commercialization, and deployment of clean energy technologies and infrastructure" (White House 2021b).

Executive Order 14057

EO 14057: Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability was signed on December 8, 2021, and requires agencies to (White House 2021c):

- Achieve 100 percent carbon pollution-free electricity by 2030, including 50 percent on a 24/7 basis.
- Reach 100 percent zero-emission vehicle acquisition by 2035, including 100 percent light-duty acquisitions by 2027.
- Achieve net-zero building emissions by 2045, including a 50 percent reduction by 2032.
- Reduce Scope 1 and 2 greenhouse gas emissions by 65 percent from 2008 levels by 2030.
- Establish targets to reduce energy and potable water use intensity by 2030.
- Reduce procurement emissions to net-zero by 2050.
- Have climate resilient infrastructure and operations.
- Advance environmental justice and equity-focused operations.
- Accelerate progress through domestic and international partnerships.

4.1.2 State

California Clean Air Act and California Ambient Air Quality Standards

The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CAAQS incorporate additional standards for most of the criteria pollutants and set standards for other

pollutants recognized by the state. In general, the California standards are more health protective (stringent) than the corresponding NAAQS. California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

The CCAA is administered by the California Air Resources Board (CARB) at the state level and by the air quality management districts and air pollution control districts (air districts) at the regional and local levels. CARB and local air districts bear responsibility for achieving California's air quality standards, which are to be achieved through air district-level air quality management plans that would be incorporated into the SIP. In California, USEPA has delegated authority to prepare SIPs to CARB, which, in turn, has delegated that authority to individual air districts. CARB is responsible for establishing state air quality standards, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and approving SIPs.

The CCAA substantially adds to the authority and responsibilities of air districts. The CCAA designates air districts as lead air quality planning agencies, requires air districts to prepare air quality plans, and grants air districts authority to implement transportation control measures. The act also emphasizes the control of "indirect and area-wide sources" of air pollutant emissions. The CCAA gives local air pollution control districts explicit authority to regulate indirect sources of air pollution and to establish traffic control measures.

Executive Orders

Executive Order S-3-05

In June 2005, Governor Schwarzenegger issued Executive Order (EO) S-3-05, which established the following GHG emissions reduction targets: 1) reduce GHG emissions to 2000 levels by 2010, 2) reduce GHG emissions to 1990 levels by 2020, and 3) reduce GHG emissions to 80 percent below 1990 levels by 2050.

Executive Order B-30-15

On April 20, 2015, Governor Brown signed EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. California's emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the United States to limit global warming below 2 degrees Celsius, the warming threshold at which there will likely be major climate disruptions such as super droughts and rising sea levels.

Executive Order B-55-18

EO B-55-18, signed on September 10, 2018, established a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. The EO requires the CARB to work with relevant State agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.

Assembly Bills

Assembly Bill 32

In September 2006, the California State Legislature enacted the California Global Warming Solutions Act of 2006, also known as AB 32. AB 32 required that statewide GHG emissions be reduced to 1990 levels by 2020. California met its 2020 reduction goal in 2018.

Assembly Bill 1279

In September 2022, Governor Newsom signed into law the California Climate Crisis Act, also known as AB 1279. AB 1279 requires the state to achieve net zero GHG emissions as soon as possible, but no later than 2045, and to achieve and maintain net negative greenhouse gas emissions thereafter. The bill also requires California to reduce statewide anthropogenic GHG emissions by 85 percent compared to 1990 levels and directs the CARB to work with relevant state agencies to achieve these goals.

Senate Bills

Senate Bill 32

SB 32 was signed into law on September 8, 2016. SB 32 expands upon AB 32 to reduce GHG emissions. SB 32 sets into law the mandated GHG emissions target of 40 percent below 1990 levels by 2030 written into EO B-30-15.

Senate Bill 375

SB 375, also known as the Sustainable Communities and Climate Protection Act, provides for a new planning process that coordinates land use planning, regional transportation plans (RTPs), and funding priorities, originally in order to help California meet the GHG reduction goals established in AB 32. SB 375 requires RTPs to incorporate a “sustainable communities strategy” (SCS). The goal of the SCS is to reduce regional VMT through land use planning and consequent transportation patterns. SCS measures include transportation demand management, transportation system management, and pricing.

Senate Bill 535 and Assembly Bill 1550

SB 535 requires the California Environmental Protection Agency to identify disadvantaged communities based on geographic, socioeconomic, public health, and environmental hazard criteria. It also requires that the investment plan developed and submitted to the Legislature pursuant to AB 1550 allocate no less than 25% of available proceeds from the carbon auctions held under AB 32 to projects that will benefit these disadvantaged communities. At least 10% of the available funds from these auctions must be directly invested in such communities.

Climate Change Scoping Plans

In December 2008, the CARB adopted the *Climate Change Scoping Plan* (2008 Scoping Plan) to achieve the goals outlined in AB 32. According to the 2008 Scoping Plan, California will implement strategies to achieve a reduction of approximately 118 million $MTCO_2e$, or approximately 22 percent from the State's projected 2020 emission level of 545 million $MTCO_2e$ under a business-as-usual scenario 10 percent, from 2008 emissions (CARB 2008).

The *First Update to the Climate Change Scoping Plan* (2014 Scoping Plan) built upon the 2008 Scoping Plan with new strategies and recommendations. The 2014 Scoping Plan contained the main strategies California will implement to achieve a reduction of 80 million $MTCO_2e$ emissions, or approximately 16 percent, from the state's projected 2020 emission level of 507 million $MTCO_2e$ under the business-as-usual scenario defined in the 2014 Scoping Plan (CARB 2014). Several strategies to reduce GHG emissions were included: Low Carbon Fuel Standard, Pavley Rule, Advanced Clean Cars program, Renewable Portfolio Standard, and SCS.

In 2016, the Legislature passed SB 32, which codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With the passage of SB 32, the Legislature passed companion legislation AB 197, which provided additional direction for developing the Scoping Plan. The CARB adopted *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan) in November 2017. The 2017 Scoping Plan represents a second update to the scoping plan to reflect the 2030 target as codified by SB 32. According to the 2017 Scoping Plan, the 2030 target of 260 million $MTCO_2e$ requires the reduction of 129 million $MTCO_2e$, or approximately 33.2 percent , from the state's projected 2030 business-as-usual scenario emissions level of 389 million $MTCO_2e$ (CARB 2017).

The *2022 Scoping for Achieving Carbon Neutrality* (2022 Scoping Plan) (CARB 2022) was adopted by CARB in November 2022. The 2022 Scoping Plan lays out a path for California to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by AB 1279. The actions and outcomes in the plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reductions in

short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

Advanced Clean Cars Program

In January 2012, the CARB approved a new emissions control program for model years 2017 through 2025 (CARB 2024a). The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero emission vehicles into a single packet of standards called Advanced Clean Cars. The Advanced Clean Cars Program includes the Zero Emission Vehicle Program, which is designed to achieve California's long-term emission reduction goals by requiring manufacturers to offer for sale specific numbers of zero-emission vehicles, which include battery electric, fuel cell, and plug-in hybrid electric vehicles.

Advanced Clean Fleets Regulation

CARB adopted the Advanced Clean Fleets (ACF) regulation in April 2023. ACF is part of CARB's overall strategy to accelerate a large-scale transition to zero-emissions medium- and heavy-duty vehicles (CARB 2024b). This regulation works in conjunction with the Advanced Clean Trucks regulation, described below, which helps ensure that zero-emissions vehicles (ZEV) are available for sale (CARB 2024b). ACF is critical to achieving both health-protective ambient air quality standards and the State's climate goals and is expected to save $26.5 billion in statewide health benefits and provide a net cost savings of $48 billion to fleets (CARB 2024b).

Advanced Clean Trucks Regulation

CARB adopted the Advanced Clean Trucks (ACT) Regulation in August 2021. The ACT Regulation aims to accelerate a large-scale transition of zero-emission medium-and heavy-duty vehicles from Class 2b to Class 8 (CARB 2021). The regulation has two components including a manufacturer sales requirement, and a reporting requirement (CARB 2021):

- **Zero-emission truck sales:** Manufacturers who certify Class 2b-8 chassis or complete vehicles with combustion engines would be required to sell zero-emission trucks as an increasing percentage of their annual California sales from 2024 to 2035. By 2035, zero-emission truck/chassis sales would need to be 55 percent of Class 2b – 3 truck sales, 75 percent of Class 4 – 8 straight truck sales, and 40 percent of truck tractor sales.
- **Company and fleet reporting:** Large employers including retailers, manufacturers, brokers, and others are required to report information about shipments and shuttle services. Fleet owners, with 50 or more trucks, are required to report about their existing fleet operations. This

information will help identify future strategies to ensure that fleets purchase available zero-emission trucks and place them in service where suitable to meet their needs.

Mobile Source Strategy

CARB developed the Mobile Source Strategy to provide an integrated action plan that establishes a unified planning perspective and common vision for transforming the mobile sector. The Mobile-Source Strategy supports multiple planning efforts, including SIPs, the Scoping Plan, and the Short-Lived Climate Pollutant (SLCP) Reduction Strategy. The Mobile-Source Strategy outlines CARB's approach to reducing emissions from mobile sources. The strategy includes actions to modernize and upgrade transportation infrastructure, enhance system-wide efficiency and mobility options, and promote clean economic growth. The Mobile-Source Strategy is updated every 5 years. The latest update is the *2020 Mobile Source Strategy*. The *2020 Mobile Source Strategy* was heard by the Board on October 28, 2021, and will be forwarded to the appropriate policy and fiscal committees of the California Legislature as required by California SB 44 (CARB 2023a).

Low Carbon Fuel Standard

The Low Carbon Fuel Standard (LCFS) mandates a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In September 2018, the LCFS regulation was amended to increase the statewide goal to a 20% reduction in the carbon intensity of California's transportation fuels by at least 2030. Note that although the LCFS regulation was amended and extended to ensure compliance with the 2030 Scoping Plan, CARB ultimately adopted a more stringent target (20 percent reduction in carbon intensity by 2030) than assumed in the 2030 Scoping Plan (18 percent reduction in carbon intensity by 2030). Therefore, future updates to the Scoping Plan are likely to include the more stringent version of the LCFS that was adopted by CARB. The majority of the emissions benefits due to the LCFS come from the production cycle (upstream emissions) of the fuel rather than the combustion cycle (tailpipe).

4.1.3 Regional/Local

Imperial County Air Pollution Control District

The Project is located in Imperial County within the Salton Sea Air Basin (Basin). The Imperial County portion of the Basin is under the jurisdiction of the Imperial County Air Pollution Control District (ICAPCD). The SSAB encompasses the entirety of Imperial County and the southeast portion of Riverside County and is generally an arid desert region, with a significant land area located below sea level.

The Basin contains relatively few major emissions sources, but may experience emissions transported from Mexicali, Mexico and from significant vehicular traffic, particularly near the two international ports of entry: Calexico West and Calexico East. Emissions sources within the Basin consist of geothermal power generation, food processing, plaster and wallboard (gypsum) manufacturing, and other light industrial facilities.

The ICAPCD is the agency responsible for monitoring air quality, as well as planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards in the district. ICAPCD is responsible for regulating stationary sources of air emissions in Imperial County. Stationary sources that have the potential to emit air pollutants into the ambient air are subject to the Rules and Regulations adopted by ICAPCD. ICAPCD is responsible for establishing stationary source permitting requirements and for ensuring that new, modified, or relocated stationary sources do not create net emission increases. Monitoring of ambient air quality in Imperial County began in 1976. Since that time, monitoring has been performed by ICAPCD, CARB, and by private industry. There are six monitoring sites in Imperial County from Niland to Calexico. The ICAPCD has developed the following plans to achieve attainment for air quality ambient standards.

- **2009 Imperial County Plan for PM_{10}.** Imperial Valley is classified as nonattainment for federal and state PM_{10} standards. As a result, ICAPCD was required to develop a PM_{10} Attainment Plan. The final plan was adopted by ICAPCD on August 11, 2009 (ICAPCD 2009).
- **2013 Imperial County Plan for 2006 24-hour $PM_{2.5}$ for Moderate Nonattainment Area.** U.S. EPA designated Imperial County as nonattainment for the 2006 24-hr $PM_{2.5}$ standard, effective December 14, 2009. The 2013 $PM_{2.5}$ SIP demonstrates attainment of the 2006 $PM_{2.5}$ NAAQS "but-for" transport of international emissions from Mexicali, Mexico. The City of Calexico, California shares a border with the City of Mexicali. Effective July 1, 2014, the City of Calexico was designated nonattainment, while the rest of the SSAB was designated attainment (ICAPCD 2014).
- **2017 Imperial County Plan for 2008 8-hour Ozone Standard.** Because of Imperial County's "moderate" nonattainment status for 2008 federal 8-hour O_3 standards, ICAPCD was required to develop an 8-hour Attainment Plan for Ozone (ICAPCD 2017). The plan includes control measures which are an integral part of how the ICAPCD currently controls the ROG and NO_X emissions within the O_3 nonattainment areas. The overall strategy includes programs and control measures which represent the implementation of Reasonable Available Control Technology (RACT) (40 CFR 51.912) and the assurance that stationary sources maintain a net decrease in emissions. The information in the 2009 RACT SIP were evaluated and were determined to still be applicable in 2017 based on the updates within the ICAPCD's rule book.

- **2018 Imperial County Plan for PM_{10}.** Imperial Valley is classified as nonattainment for federal and state PM_{10} standards. The 2018 SIP maintained previously adopted fugitive dust control measures (Regulation VIII) that were approved in the Imperial County portion of the California SIP in 2013 (see above) (ICAPCD 2018a).
- **2018 Imperial County Plan for $PM_{2.5}$.** U.S. EPA designated Imperial County as nonattainment for the 2018 24-hr $PM_{2.5}$ standard. The 2018 $PM_{2.5}$ SIP concluded that the majority of the $PM_{2.5}$ emissions resulted from transport in nearby Mexico. Specifically, the SIP demonstrates attainment of the 2006 $PM_{2.5}$ NAAQS "but for" transport of international emissions from Mexicali, Mexico. In accordance with the CCAA, the $PM_{2.5}$ SIP satisfies the attainment demonstration requirement satisfying the provisions of the CCAA (ICAPCD 2018b).

In addition to the above plans, the ICAPCD is working cooperatively with counterparts from Mexico to implement emissions reductions strategies and projects for air quality improvements at the border. The two countries strive to achieve these goals through local input from states, county governments, and citizens. Within the Mexicali and Imperial Valley area, the Air Quality Task Force has been organized to address those issues unique to the border region known as the Mexicali/Imperial air shed. The Air Quality Task Force membership includes representatives from federal, State, and local governments from both sides of the border, as well as representatives from academia, environmental organizations, and the public. This group was created to promote regional efforts to improve the air quality monitoring network, emissions inventories, and air pollution transport modeling development, as well as the creation of programs and strategies to improve air quality.

ICAPCD Rules and Regulations

ICAPCD has the authority to adopt and enforce regulations dealing with controls for specific types of sources, emissions or hazardous air pollutants, and New Source Review. The ICAPCD Rules and Regulations are part of the SIP and are separately enforceable by the EPA.

- **Rule 106 – Abatement.** The Board may, after notice and a hearing, issue, or provide for the issuance by the Hearing Board, of an order for abatement whenever the District finds that any person is in violation of the rules and regulations limiting the discharge of air contaminants into the atmosphere.
- **Rule 107 – Land Use.** The purpose of this rule is to provide ICAPCD the duty to review and advise the appropriate planning authorities within the District on all new construction or changes in land use which the Air Pollution Control Officer believes could become a source of air pollution problems.

- **Rule 201 – Permits Required.** The construction, installation, modification, replacement, and operation of any equipment which may emit or control Air Contaminants require ICAPCD permits.
- **Rule 207 – New and Modified Stationary Source Review**. Establishes preconstruction review requirements for new and modified stationary sources to ensure the operations of equipment does not interfere with attainment or maintenance of ambient air quality standards.
- **Rule 208 – Permit to Operate.** The ICAPCD would inspect and evaluate the facility to ensure the facility has been constructed or installed and will operate to comply with the provisions of the Authority to Construct permit and comply with all applicable laws, rules, standards, and guidelines.
- **Rule 310 – Operational Development Fee.** The purpose of this rule is to provide ICAPCD with a sound method for mitigating the emissions produced from the operation of new commercial and residential development projects throughout the County of Imperial and incorporated cities. All project proponents have the option to either provide off-site mitigation, pay the operational development fee, or do a combination of both. This rule will assist ICAPCD in attaining the state and federal ambient air quality standards for PM_{10} and O_3.
- **Rule 401 – Opacity of Emissions.** Sets limits for release or discharge of emissions into the atmosphere, other than uncombined water vapor, that are dark or darker in shade as designated as No.1 on the Ringelmann Chart[1] or obscure an observer's view to a degree equal to or greater than smoke does as compared to No.1 on the Ringelmann Chart, for a period or aggregated period of more than three minutes in any hour.
- **Rule 403 – General Limitations on the Discharge of Air Contaminants.** Rule 403 sets forth limitations on emissions of pollutants, including particulate matter, from individual sources.
- **Rule 407 – Nuisance.** Rule 407 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
- **Rule 801 – Construction and Earthmoving Activities.** Rule 801 aims to reduce the amount of PM_{10} entrained in the ambient air as a result of emissions generated from construction and other earthmoving activities by requiring actions to prevent, reduce, or mitigate PM_{10} emissions. This rule applies to any construction and other earthmoving activities, including,

[1] The Ringelmann scale is a scale for measuring the apparent density or opacity of smoke.

but not limited to, land clearing, excavation related to construction, land leveling, grading, cut and fill grading, erection or demolition of any structure, cutting and filling, trenching, loading or unloading of bulk materials, demolishing, drilling, adding to or removing bulk of materials from open storage piles, weed abatement through disking, back filling, travel on-site and travel on access roads to and from the site.

- **Regulation VIII – Fugitive Dust Rules.** Regulation VIII sets forth rules regarding the control of fugitive dust, including fugitive dust from construction activities. The regulation requires implementation of fugitive dust control measures to reduce emissions from earthmoving, unpaved roads, handling of bulk materials, and control of track-out/carry-out dust from active construction sites. Best Available Control Measures to reduce fugitive dust during construction and earthmoving activities include but are not limited to:
    - Phasing of work in order to minimize disturbed surface area
    - Application of water or chemical stabilizers to disturbed soils
    - Construction and maintenance of wind barriers
    - Use of a track-out control device or wash down system at access points to paved roads.

Compliance with Regulation VIII is mandatory for all construction sites, regardless of size; however, compliance with Regulation VIII does not constitute mitigation under the reductions attributed to environmental impacts. In addition, compliance for a project includes: (1) the development of a dust control plan for the construction and operational phase; and (2) notification to the Air District is required 10 days prior to the commencement of any construction activity. Furthermore, any use of engine(s) and/or generator(s) of 50 horsepower or greater may require a permit through ICAPCD.

Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino and Imperial Counties, and addresses regional issues relating to transportation, the economy, community development and the environment. SCAG is the federally designated Metropolitan Planning Organization (MPO) for the majority of the Southern California region.

On September 3, 2020, the SCAG Regional Council adopted the 2020-2045 RTP/SCS, which is an update to the previous 2016-2040 RTP/SCS, and contains regional development and growth factors (SCAG 2020). The RTP/SCS is based on projections that originate with local jurisdictions. SCAG is required to adopt an SCS along with its RTP pursuant to Senate Bill (SB) 375 (Chapter 728, Statutes of 2008), which required the development of regional targets for reducing passenger vehicle GHG emissions. Under SB 375, CARB was required, in consultation with the state's MPOs, to set

regional GHG reduction targets for the passenger vehicle and light-duty truck sector for 2020 and 2035. The 2020-2045 RTP/SCS includes the latest SB 375 Regional Plan climate targets, which required SCAG to achieve an 8 percent reduction by 2020 and a 19 percent reduction by 2035 in per capita passenger vehicle GHG emissions relative to a 2005 baseline.

Although the RTP/SCS is not focused specifically on air quality emissions, the growth projections established in the 2020-2045 RTP/SCS affect air quality through optimized land use planning and the consequential reduction of emissions from passenger and light-duty vehicles. SCAG's SCS is "built on a foundation of contributions from communities, cities, counties and other local agencies" and "based on local general plans as well as input from local governments." SCAG's 2020-2045 RTP/SCS provides specific strategies for implementation. These strategies include supporting projects that encourage a diverse job opportunities for a variety of skills and education, recreation and cultures and a full range of shopping, entertainment and services all within a relatively short distance; encouraging employment development around current and planned transit stations and neighborhood commercial centers; encouraging the implementation of a "Complete Streets" policy that meets the needs of all users of the streets, roads and highways including bicyclists, children, persons with disabilities, motorists, electric vehicles, movers of commercial goods, pedestrians, users of public transportation, and seniors; and supporting alternative fueled vehicles (SCAG 2020).

Imperial County General Plan

The Imperial County General Plan serves as the overall guiding policy for the County. The Conservation and Open Space Element includes objectives for helping the County achieve the goal of improving and maintaining the quality of air in the region (Imperial County 2016). The Imperial County General Plan does not contain any goals, objectives, policies or programs that directly pertain to GHGs at the project-level. The following summarizes the goals and policies with respect to air quality:

- **Goal 7:** The County shall actively seek to improve the quality of air in the region.
    - *Objective 7.1:* Ensure that all project and facilities comply with current Federal, State, and local requirements for attainment of air quality objectives.
    - *Objective 7.2:* Develop management strategies to mitigate fugitive dust. Cooperate with all Federal, State and local agencies in the effort to attain air quality objectives.
    - *Objective 7.3:* Work cooperatively with the EPA and CARB in evaluating air quality monitoring in Imperial County.
    - *Objective 7.4:* Enforce and monitor environmental mitigation measures relating to air quality.

- *Objective 7.5:* Coordinate efforts with Imperial County Transportation Commission (ICTC) and other appropriate agencies to reduce fugitive dust from unpaved streets.
- *Objective 7.6:* Explore and assess strategies to reduce greenhouse gas emissions in the County.

Imperial Valley Regional Climate Action Plan

The Imperial County Transportation Commission is currently developing a Regional Climate Action Plan (RCAP), which is a strategy for how the region will work toward reducing its GHG emissions in accordance with statewide targets (ICTC 2021). The Imperial County Transportation Commission is committed to a collaborative and inclusive process and is conducting extensive outreach about the strategies that are to be included within the RCAP. The RCAP encompasses all of Imperial Valley, including Imperial County, and the seven incorporated cities: Calipatria, Calexico, Brawley, El Centro, Holtville, Imperial, and Westmorland. The RCAP is intended to facilitate the reduction of GHG emissions throughout Imperial County in a way that is practical, efficient, and beneficial to the community and enhances Imperial County's desirable characteristics and qualities. The foundation for developing emission reduction and climate adaptation measures will be based on the County's existing work, as detailed in the region's extensive plans and programs. The RCAP has not been finalized or adopted nor has it been qualified in accordance with CEQA Guidelines Section 15183.5 but is included for disclosure purposes.

5 Environmental Setting

5.1 Climate, Meteorology, and Topography

The climate of Imperial County is governed by the large-scale sinking and warming of air in the semi-permanent high-pressure zone of the eastern Pacific Ocean. The high-pressure ridge blocks out most mid-latitude storms, except in the winter, when it is weakest and located farthest south. The coastal mountains prevent the intrusion of any cool, damp air found in California coastal areas. Because of the barrier and weakened storms, Imperial County experiences clear skies, extremely hot summers, mild winters, and little rainfall. The sun shines, on the average, more in Imperial County than anywhere else in the United States (ICAPCD 2017a).

The lack of clouds and atmospheric moisture creates strong diurnal and seasonal temperature variations ranging from an average summer maximum of 108 degrees Fahrenheit (° F) down to a winter morning minimum of 38° F. The most pleasant weather occurs from about mid-October to early May when daily highs are in the 70s and 80s with very infrequent cloudiness or rainfall. Imperial County experiences rainfall on an average of only four times per year (>0.10 inches in 24 hours). The local area usually has three days of rain in winter and one thunderstorm day in August. The annual rainfall in this region is less than three inches per year.

Humidity is low throughout the year, ranging from an average of 28 percent in summer to 52 percent in winter. The large daily oscillation of temperature produces a corresponding large variation in the relative humidity. Nocturnal humidity rises to 50 to 60 percent but drops to about 10 percent during the day.

The wind in Imperial County follows two general patterns. Wind statistics indicate prevailing winds are from the west-northwest through southwest; a secondary flow maximum from the southeast is also evident. The prevailing winds from the west and northwest occur seasonally from fall through spring and are known to be from the Los Angeles area. Occasionally, Imperial County experiences periods of extremely high wind speeds. Wind speeds can exceed 31 miles per hour (mph), and this occurs most frequently during the months of April and May. However, speeds of less than 6.8 mph account for more than one-half of the observed wind measurements (ICAPCD 2017a).

5.2 Existing Air Quality

5.2.1 Regional Attainment Status

The CAA requires the USEPA to designate areas within the country as either "attainment" or "nonattainment" for each criteria pollutant based on whether the NAAQS have been achieved. Similarly, the CCAA requires the CARB to designate areas within California as either "attainment" or "nonattainment" for each criteria pollutant based on whether the CAAQS have been achieved. If a pollutant concentration is lower than the standard, the area is classified as "attainment" for that pollutant. If a pollutant exceeds the standard, the area is classified as "nonattainment" for that pollutant. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified" or "unclassifiable". The designation of "unclassifiable/attainment" means that the area meets the standard or is expected to be meet the standard despite a lack of monitoring data. Areas that achieve the standards after a nonattainment designation are redesignated as maintenance areas and must have approved maintenance plans to ensure continued attainment of the standards.

Table 2 depicts the current attainment status of Imperial County for each criteria air pollutant with respect to the NAAQS and CAAQS.

Table 2. Imperial County Attainment Status

Criteria Air Pollutant	Designation	
	Federal Standards	State Standards
O_3	Nonattainment	Nonattainment
PM_{10}	Attainment	Attainment
$PM_{2.5}$	Nonattainment	Attainment
CO	Unclassified/Attainment	Attainment
NO_2	Unclassified/Attainment	Attainment
SO_2	Unclassified/Attainment	Attainment
Sulfates	No Federal Standard	Attainment

Table 2. Imperial County Attainment Status

Criteria Air Pollutant	Designation	
	Federal Standards	State Standards
Hydrogen Sulfide	No Federal Standard	Unclassified
Lead	Unclassified/Attainment	Attainment

Source: CARB 2024b
Notes:
O_3 = ozone; PM_{10} = particles of 10 micrometers and smaller; $PM_{2.5}$ = particles of 2.5 micrometers and smaller; CO = carbon monoxide; NO_2 = nitrogen dioxide; SO_2 = sulfur dioxide; Pb = lead

As presented in Table 2, Imperial County is designated as a nonattainment area for O_3 and $PM_{2.5}$ under NAAQS and a nonattainment area for O_3 under CAAQS.

5.2.2 Local Ambient Air Quality

There are a number of ambient air monitoring stations throughout the Salton Sea Air Basin. The purpose of the monitoring stations is to measure ambient concentrations of pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. Table 3 presents the most recent ambient air quality data from 2019 to 2023 from the El Centro monitoring station.

Table 3. Ambient Air Quality Monitoring Data

	Year				
	2019	2020	2021	2022	2023
O_3					
Maximum 1-hour concentration (ppm)	0.080	0.097	0.096	0.113	0.100
Maximum 8-hour concentration (ppm)	0.071	0.077	0.084	0.079	0.091
Number of days standard exceeded					
National 1-hour standard	0	1	1	2	5
State 8-hour standard	1	2	7	10	15
NAAQS 8-hour (>0.07 ppm)	1	2	6	10	15
PM_{10}					

Table 3. Ambient Air Quality Monitoring Data

	Year				
	2019	2020	2021	2022	2023
National maximum 24-hour concentration (µg/m^3)	123.9	197.5	194.5	554.6	231.6
State maximum 24-hour concentration (µg/m^3)	130.0	197.7	186.9	553.6	224.0
National annual average concentration (µg/m^3)	34.9	41.5	41.8	44.7	36.7
State annual average concentration (µg/m^3)	35.6	41.5	41.6	45.5	36.7
Number of days standard exceeded					
National 24-hour standard	0	2	1	2	3
State 24-hour standard	54	92	89	99	65
$PM_{2.5}$					
National maximum 24-hour concentration (µg/m^3)	21.4	28.5	19.1	30.6	42.0
State maximum 24-hour concentration (µg/m^3)	21.4	28.5	19.1	30.6	42.0
National annual average concentration (µg/m^3)	7.9	9.8	8.4	8.9	7.8
State annual average concentration (µg/m^3)	7.9	9.8	8.3	8.9	*
Number of days standard exceeded					
NAAQS 24-hour standard	1	5	2	5	3

Source: CARB 2024
Notes:
O_3 = ozone; PM_{10} = particles of 10 micrometers and smaller; $PM_{2.5}$ = particles of 2.5 micrometers and smaller; µg/m^3 = micrograms per cubic meter; ppb = parts per billion; NAAQS = national ambient air quality standards; CAAQS = California Ambient air quality standards. * Insufficient data available to determine the value.

5.2.3 Valley Fever

Valley Fever (also called *coccidioidomycosis* or “cocci”) is a fungal lung infection that is caused by a fungus that lives in the soil. This fungus, Coccidioides, has been found in the southwestern United States and can be breathed in when soil is disturbed, and the fungus is spread through the air. People can contract Valley Fever when working or living in areas with soil disturbance such as during construction activities for grading or soil movement. Valley Fever causes flu-like symptoms including

fatigue, cough, fever, shortness of breath, headache, night sweats, muscle aches, or rash, but can also present no symptoms in some people. Because of these common symptoms, people may delay treatment and let the infection take its course without medical attention. Valley fever can be serious and even fatal. Recently in California, there have been more than 1,000 people hospitalized with Valley fever each year, of which about 1 in 10 have died in the hospital (CDPH, 2024).

Valley fever is contracted by breathing in dust from outdoor air that contains spores of the Coccidioides fungus that grows in the soil. Like seeds from a plant, a fungus grows and spreads from tiny spores that are too small to see. When soil or dirt is stirred up by strong winds or while digging, dust containing these fungus spores can get into the air. Anyone who lives, works, or travels in an area where the Valley fever fungus grows can breathe in these fungus spores from outdoor dust without knowing it and become infected (CDPH, 2024).

5.2.4 Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution include children, the elderly, and people with cardiovascular and chronic respiratory diseases. Sensitive Receptor locations may include hospitals, schools, and day care centers, and such other locations as the air district board or California Air Resources Board may determine (CARB 2024c).

The nearest sensitive receptor is a residence located within the central portion of the Big Rock 2 Cluster North Site, in the southwest corner of the Jessup Road/W Campbell Road intersection. Other nearby sensitive receptors include the following:

- Residence located near the northeastern corner of the Big Rock 2 Cluster West site (north of West Vaughn Road)
- Residence located near the northeastern corner of the Big Rock 2 Cluster East site (west of Derrick Road)
- Residence located at the southwest corner of the Vogel Road/W Wixom Road intersection

5.2.5 Existing Operational Emissions

As previously discussed, the Project site is currently vacant. Thus, there are no existing site emissions and all project-related emissions are assumed to be new.

5.3 Global Climate Change

5.3.1 Existing Greenhouse Gas Emissions

CARB compiles GHG inventories for the State of California. The most updated inventory is referred to as the 2023 edition, which reports the State's GHG emissions inventory from calendar year 2021. Based on the 2021 GHG inventory data (i.e., the latest year for which data are available from CARB), California emitted 381.3 $MMTCO_2e$ including emissions resulting from imported electrical power (CARB 2021c). According to CARB, as of 2016, statewide GHG emissions dropped below the 2020 GHG Limit (431 $MMTCO_2e$) and have remained below the limit since that time, due in part to the state's GHG reduction programs (such as the Renewables Portfolio Standard, Low Carbon Fuel Standard (LCFS), vehicle efficiency standards, and declining caps under the Cap and Trade Program).Table 4 identifies and quantifies Statewide anthropogenic GHG emissions and sinks (e.g., carbon sequestration due to forest growth) in 1990 and 2021 (i.e., the most recent year in which data are available from CARB). As shown in Table 4, the transportation sector is the largest contributor to Statewide GHG emissions at approximately 38 percent in 2021.

Table 4. State of California Greenhouse Gas Emissions

Category	Total 1990 Emissions using IPCC SAR ($MMTCO_2e$)	Percent of Total 1990 Emissions	Total 2021 Emissions using IPCC AR4 ($MMTCO_2e$)	Percent of Total 2021 Emissions
Transportation	150.7	35%	145.6	38%
Electric Power	110.6	26%	62.4	16%
Commercial	14.4	3%	12.2	4%
Residential	29.7	7%	24.8	7%
Industrial	103.0	24%	73.9	19%
Recycling and Waste [a]	–	–	8.4	2%
High-GWP/Non-Specified [b]	1.3	<1%	21.3	6%
Agriculture/Forestry	23.6	6%	30.9	8%
Forestry Sinks [c]	-6.7		--	--

Table 4. State of California Greenhouse Gas Emissions

Category	Total 1990 Emissions using IPCC SAR ($MMTCO_2e$)	Percent of Total 1990 Emissions	Total 2021 Emissions using IPCC AR4 ($MMTCO_2e$)	Percent of Total 2021 Emissions
Net Total (IPCC AR4) [d]	**431**	**100%**	**381.3**	**100%**

Sources: CARB 1990
Notes:
[a] Included in other categories for the 1990 emissions inventory.
[b] High-GWP gases are not specifically called out in the 1990 emissions inventory.
[c] Revised methodology under development (not reported for 2021).
[d] CARB revised the State's 1990 level GHG emissions using GWPs from the IPCC AR4.

As discussed previously, the Project Site is currently undeveloped and vacant. Existing GHG emissions generated from the Project Site are assumed to be zero.

6 Methodology

Air quality and GHG impacts associated with construction of the Project were assessed and quantified using industry standard and accepted software tools, techniques, and emission factors. A summary of the methodology for both air quality and GHG are provided below. Assumptions and emission calculations are included in Appendix B.

6.1 Air Quality

6.1.1 Construction

For purposes of estimating project emissions, and based on information provided by the applicant, it is assumed that construction of the Project would commence in April 2026 and is anticipated ending in October 2027. The Project is assumed to have a 30-year lifespan and at the end of operation will be decommissioned. However, the EMFAC and OFFROAD models in CalEEMod only have emission factors through 2050. As such, the year 2050 was assumed for estimating emissions from the decommissioning phase.

Earthmoving activities are expected to include the construction of the access roads, O&M building, substation, water storage tank(s), solar panel foundation supports, BESS(s), transmission poles and conductor stringing, and any storm water protection or storage (detention) facilities. The Project is not anticipated to require paving, removing, or significant alteration of existing agricultural soil(s). Rather, solar panels would be installed atop the flat lots, leaving the farming soil relatively undisturbed and available for crop cultivation at the end of the Project's life. Final grading may include revegetation with low lying grass or applying earth-binding materials to disturbed areas to control dust and increase the reflectivity of the ground surface. However, the analysis conservatively assumes all 1,849 acres will be graded.

Regional emissions during construction are forecasted by assuming a conservative estimate of construction activities (i.e. assuming all construction occurs at the earliest feasible date) and applying the mobile source and fugitive dust emissions factors. Assuming an early date for construction activities is conservative because emission factors decrease in future years due to improvements in engine technology and the retirement of older, dirtier equipment and vehicles from the fleet. pursuant to state regulations that require vehicle fleet operators to phase-in less-polluting trucks.

All worker, vendor, and hauling trips would occur on public roadways (i.e., not within the project construction boundary). However, some driving on unpaved roads could occur to unload materials and installation of PV arrays. Therefore, an input value of 85% paved roads is utilized in the emissions

model to account for some unpaved road usage. Vehicle speed would also be restricted to 15 miles per hour on both paved and unpaved roads.

Construction emissions were estimated using the California Emissions Estimator Model (CalEEMod), version 2022, which incorporates CARB's EMFAC2021 model. For the purposes of the air quality analysis, it has been assumed that the contractor would implement dust control measures during construction pursuant to ICAPCD Regulation VIII. The applicant provided the number of construction workers and vendor trips as well as the trip lengths. Modeling assumptions, data and results are provided in Appendix B.

6.1.2 Operations

Once constructed, periodic maintenance of the PV solar and BESS facility would generally be limited to cleaning PV panels, monitoring, and site security. Since the Project would share O&M, substation, and/or transmission facilities with other nearby PV solar and BESS projects, it is assumed the Project would share personnel, thereby reducing the Project's on-site staff to below the anticipated 4 to 10 full-time employees.

There are no expected sources of stationary emission sources (i.e. emergency generators). During operation of the Project, minimal amounts of emissions could be generated from maintenance operations, including routine cleaning and from periodic visits from service vehicles. Therefore, minimal additional emissions would be generated from vehicle trips by worker staff for periodic inspections or maintenance purposes and emissions will be analyzed qualitatively.

6.2 Greenhouse Gases

6.2.1 Construction

Construction-related GHG emissions were estimated using CalEEMod outputs of CO_2, CH_4, and CO_2e. The output values used in this analysis were adjusted to be Project-specific based on equipment types and the construction schedule. These values were then applied to the same construction phasing assumptions used in the criteria pollutant analysis (see Section 6.1 Air Quality) to generate GHG emissions values for each construction year. Since construction emissions are a one-time occurrence for the Project, construction GHG emissions are amortized over a 30-year Project lifetime and added to the operational emissions on an annual basis.

6.2.2 Operations

Once constructed, periodic maintenance of the PV solar and BESS facility would generally be limited to cleaning PV panels, monitoring, and site security. Since the Project would share O&M, substation, and/or transmission facilities with other nearby PV solar and BESS projects, it is assumed the Project would share personnel, thereby reducing the Project's on-site staff to below the anticipated 4 to 10 full-time employees.

There are no expected sources of stationary emission sources (i.e. emergency generators). During operation of the Project, minimal amounts of emissions could be generated from maintenance operations, including routine cleaning and from periodic visits from service vehicles. Therefore, minimal additional emissions would be generated from vehicle trips by worker staff for periodic inspections or maintenance purposes and emissions will be analyzed qualitatively.

7 Thresholds of Significance

7.1 Air Quality

Based on the California Environmental Quality Act (CEQA) Guidelines Appendix G, Project impacts related to air quality are considered significant if any of the following occur:

- Conflict with or obstruct implementation of the applicable air quality plan
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for O_3 precursors)
- Expose sensitive receptors to substantial pollutant concentrations
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people

ICAPCD amended the *Air Quality Handbook: Guidelines for the Implementation of CEQA* on December 12, 2017 (ICAPCD 2017b). ICAPCD established significance thresholds based on the state CEQA thresholds. The handbook was used to determine the proper level of analysis for the Project.

CONSTRUCTION

For construction projects, the *Air Quality Handbook* indicates that the significance threshold for NO_x is 100 pounds per day and for ROG is 75 pounds per day. As discussed in the ICAPCD's *Air Quality Handbook*, the approach to evaluating construction emissions should be qualitative rather than quantitative. In any case, regardless of the size of the Project, the standard mitigation measures for construction equipment and fugitive PM_{10} must be implemented at all construction sites. The implementation of discretionary mitigation measures, as listed in Section 7.1 of the ICAPCD's *Air Quality Handbook*, apply to those construction sites that are 5 acres or more for non-residential developments or 10 acres or more in size for residential developments. The mitigation measures found in Section 7.1 of the ICAPCD's handbook are intended as a guide of feasible mitigation measures and are not intended to be an all-inclusive comprehensive list of all mitigation measures. Table 5 presents the construction emission thresholds that are identified by ICAPCD.

Table 5. Imperial County Air Pollution Control District Significance Thresholds for Construction Activities

Pollutant	Thresholds
PM_{10}	150 pounds per day
ROG	75 pounds per day
NO_X	100 pounds per day
CO	550 pounds per day

Source: ICAPCD 2017b
Notes:
CO = carbon monoxide; NO_x = nitrogen oxide; PM_{10} = particulate matter less than 10 microns in diameter; ROG = reactive organic gas

7.1.1 Greenhouse Gases

Based on CEQA Guidelines Appendix G, Project impacts related to GHG emissions are considered significant if any of the following occur:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Although the County has taken steps toward development of a Draft Regional Climate Action Plan, the County has not formally adopted a Climate Action Plan or other GHG reduction plan that addresses community-wide emissions to date. Additionally, the ICAPCD has not adopted a quantitative threshold for determining significance of GHG emissions for projects.

To evaluate whether a project may generate a quantity of GHG emissions with the potential to have a significant impact on the environment, local air districts have developed a number of bright-line significance thresholds. Significance thresholds are numeric mass emissions thresholds that identify the level at which additional analysis of project GHG emissions is necessary. If Project emissions are equal to or below the significance threshold, with or without mitigation, the Project's GHG emissions would be less than significant. The CEQA and Climate Change paper (AEP 2016) provides a common platform of information and tools to support local governments and was prepared as a resource, not as a guidance document. CEQA Guidelines Section 15064.4 expressly provides that a "lead agency shall have discretion to determine, in the context of a particular project," whether to "quantify

greenhouse gas emissions resulting from a project" and/or "rely on a qualitative analysis or performance based standards." Updates to CEQA Guidelines Section 15064.4 that took effect in December 2018 further state that a lead agency should "focus its analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change" and that the analysis should "reasonably reflect evolving scientific knowledge and state regulatory schemes." Consistent with recent County projects, the County has relied upon the South Coast Air Quality Management District (SCAQMD) quantitative thresholds, as discussed below.

In December 2008, the SCAQMD adopted a 10,000 $MTCO_2e$ per year significance threshold for industrial facilities for projects in which the SCAQMD is the lead agency. Although SCAQMD has not formally adopted a significance threshold for GHG emissions generated by a project for which SCAQMD is not the lead agency, or a uniform methodology for analyzing impacts related to GHG emissions on global climate change, in the absence of any industry-wide accepted standards applicable to this Project, the SCAQMD's significance threshold of 10,000 $MTCO_2e$ per year for industrial projects is the most relevant GHG significance threshold and is used as a benchmark for the Project. It should be noted that the SCAQMD's significance threshold of 10,000 $MTCO_2e$ per year for industrial projects is intended for long-term operational GHG emissions. The SCAQMD has developed guidance for the determination of the significance of GHG construction emissions that recommends that total emissions from construction be amortized over an assumed project lifetime of 30 years and added to operational emissions and then compared to the threshold (SCAQMD 2008).

A project is considered to have a significant impact and cumulatively considerable impact if it exceeds SCAQMD's threshold of 10,000 $MTCO_2e$ per year.

8 Project Impacts

8.1 Air Quality

8.1.1 Consistency with Air Quality Plans and Policies

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

A potentially significant impact to air quality would occur if the Project would conflict with or obstruct implementation of the region's SIP. As previously described, the Project region is classified as nonattainment for federal O_3 and $PM_{2.5}$ standards. The region's SIP is made up of the following ICAPCD plans; 2009 Imperial County Plan for PM_{10}, 2013 Imperial County Plan for 2006 24-hour $PM_{2.5}$ for Moderate Nonattainment Area, 2017 Imperial County Plan for 2008 8-hour Ozone Standard, 2018 Imperial County Plan for PM_{10}, and 2018 Imperial County Plan for $PM_{2.5}$. These air quality attainment plans are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls describing how the state will attain ambient air quality standards. These SIP plans and associated control measures are based on information derived from projected growth in Imperial County in order to project future emissions and then determine strategies and regulatory controls for the reduction of emissions. Growth projections are based on the general plans developed by Imperial County and the incorporated cities in the county.

The basis for the air quality plans is the SCAG population growth and regional vehicle miles traveled projections, which are based in part on the land uses established by local General Plans. As such, projects that propose development that is consistent with the local land use plans would be consistent with growth projections and air quality plans emissions estimates. If a project would result in development that is less dense than anticipated by the growth projections, the project would be considered consistent with the air quality plans. In the event a project would result in development that results in greater than anticipated growth projections, the project would result in air pollutant emissions that may not have been accounted for in the air quality plans, and thus may obstruct or conflict with the air quality plans. As described below, ICAPCD has implemented plans for meeting state and federal standards of nonattainment pollutants.

The 2017 Imperial County Reasonably Available Control Technology State Implementation Plan (RACT SIP) relies primarily on the land use and population projections provided by SCAG and the CARB on-road emissions forecast as a basis for vehicle emission forecasting. The RACT SIP relied on growth projections in SCAG's 2016–2040 Regional Transportation Plan (RTP)/Sustainable

Communities Strategy (SCS) (SCAG 2016). In 2012, SCAG estimated that unincorporated Imperial County had 16,400 jobs and in 2040 would have 32,300 jobs for an additional 15,900 jobs or 567 jobs per year.

As the Project does not contain a residential component, the Project would not result in an increase in the regional population. While the Project would contribute to energy supply, which is one factor of population growth, the Project is a solar energy project and would not significantly increase employment or growth within the region. According to the Project applicant, there would be approximately 4 to 10 full-time jobs created by the Project. The Project would not exceed the projected annual employment growth in the area. Therefore, the Project is within the growth assumptions that underlie the emissions forecasts in the RACT SIP. In addition, the Project and cumulative projects combined would remain consistent with the growth projections. As a result, the Project would not conflict with or obstruct implementation of the air quality management plan, and impacts would be less than significant.

A project is deemed to not conflict with applicable air quality plan if it is consistent with the existing land use plan that was used to generate the growth forecast and does not increase dwelling unit density, vehicle trips, and vehicle miles traveled due to zoning changes, specific plans and general plan amendments. The Project does not include residential or commercial development. As stated above, the Project would include 4 to 10 employees for periodic maintenance.

Construction

Construction of the Project would generate emissions of VOC, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ that could result in short-term impacts on ambient air quality in the study area. Sources of construction emissions include heavy-duty construction equipment (such as graders, trenchers, and loaders), worker, vendor, and haul truck vehicle emissions, and fugitive dust from material movement. Construction emissions for the Project were estimated for each construction phase and are discussed further below, under Threshold AQ-2, and shown in Table 6. As shown below in Table 6, the Project's construction emissions would exceed the ICAPCD significance threshold for PM_{10}. This potential impact is considered significant. However, implementation of Mitigation Measures AQ-1 through AQ-5 would reduce emissions. As previously discussed above, the Project is not anticipated to significantly alter existing soils. Rather solar panels, which would occupy approximately 61 percent of the project site, would be installed atop the flat lots, leaving the farming soil relatively undisturbed and available for crop cultivation at the end of the project's life. All 1,849 acres were assumed to be graded with 15 percent of roads unpaved. Due to this conservative assumption, the ICAPCD threshold for PM_{10} would be exceeded. Pursuant to ICAPCD, all construction sites, regardless of size, must comply with the requirements contained within Regulation VIII – Fugitive Dust Control Measures. The proposed project must comply with the requirements of ICAPCD Regulation VIII for the control of fugitive dust.

Therefore, implementation of the Regulation VIII fugitive dust control measures (Mitigation Measure AQ-1) is required for the project.

Mitigation Measure AQ-2 would require all off-road construction diesel engines not registered under CARB's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower or more, meet, at a minimum, the Tier 4 Final California Emission Standards for Off-Road Compression-Ignition Engines as specified in C.C.R., Title 13, section 2423(b)(1) unless such engine is not available for a particular item of equipment. In the event a Tier 4 Final engine is not available for any off-road engine larger than 100 horsepower, that engine shall be equipped with retrofit controls that would provide NOx and particulate matter emissions that are equivalent to Tier 4 engine. Implementation of Mitigation Measure AQ-2 would be implemented to reduce PM_{10} emissions, but as shown in Table 6, would also have the co-benefit of reducing NOx emissions during construction. A list of the construction equipment, including all off-road equipment utilized at the project site by make, model, year, horsepower and expected/actual hours of use, and the associated EPA Tier shall be submitted to the County Planning and Development Services Department and ICAPCD prior to the issuance of a grading permit. The equipment list shall be submitted periodically to ICAPCD to perform a NOx analysis. ICAPCD shall utilize this list to calculate air emissions to verify that equipment use does not exceed significance thresholds.

Further, implementation of Mitigation Measure AQ-3 would require additional dust suppression methods (such as water or chemical stabilization) on all unpaved roads associated with construction activities, Mitigation Measure AQ-4 requires development and implementation of a dust suppression management plan prior to any earthmoving activity, and Mitigation Measure AQ-5 limits the speed of all vehicles operating onsite on dirt roads to 15 miles per hour or less. Accordingly, as shown in Table 6, with implementation of Mitigation Measures AQ-1 through AQ-5, PM_{10} emissions would not exceed the ICAPCD significance threshold. Therefore, this impact would be reduced to a level less than significant.

As described above, conformance with the AQMP for development projects is determined by demonstrating compliance with local land use plans and/or population projections and comparing assumed emissions in the AQMP to proposed emissions. Because the Project complies with local land use plans and population projections and would not exceed ICAPCD's regional mass daily emissions thresholds, construction of the Project would not conflict with or obstruct implementation of the applicable air quality plan. Impacts would be less than significant with mitigation.

Operations

It is assumed the Project would share O&M, substation, and/or transmission facilities with other adjacent PV solar and BESS projects that have been approved and entitled by Imperial County, or with any future nearby proposed renewable energy projects.

The facility would operate 24/7 with potentially 4 to 10 full-time employees at any given time. During long-term operations of the Project, minimal amounts of criteria air pollutants would be generated from maintenance operations, including routine cleaning and from periodic visits from service vehicles. However, these events are expected to be occasional and result in minimal emissions. Therefore, minimal additional emissions would be generated from vehicle trips by worker staff for periodic inspections or maintenance purposes.

Although no significant air quality impact would occur during operation, the Project would be required to comply with Regulation VIII as detailed in Mitigation Measure AQ-2 that would further reduce fugitive dust emissions associated with the Project. In addition, implementation of Mitigation Measure AQ-5 would limit the speed of all vehicles operating onsite on paved and unpaved roads to 15 miles per hour or less and Mitigation Measure AQ-6 would ensure an Operational Dust Control Plan is implemented.

Additionally, the Project does not include residential or commercial development, would employ 4 to 10 full-time employees but would not induce unplanned population or employment growth. Therefore, the Project would not conflict with or obstruct the implementation of the applicable air quality plan.

Mitigation Measures

AQ-1 **Construction Equipment**. All off-road construction diesel engines not registered under CARB's Statewide Portable Equipment Registration Program, which have a rating of 50 horsepower or more, shall meet, at a minimum, the Tier 4 Final California Emission Standards for Off-road Compression-Ignition Engines as specified in C.C.R., Title 13, section 2423(b)(1) unless such engine is not available for a particular item of equipment. In the event a Tier 4 Final engine is not available for any offroad engine larger than 100 horsepower, that engine shall be equipped with retrofit controls that would provide NO_X and particulate matter emissions that are equivalent to Tier 4 engine. A list of the construction equipment, including all off-road equipment utilized at the project site by make, model, year, horsepower and expected/actual hours of use, and the associated EPA Tier shall be submitted to the County Planning and Development Services Department and ICAPCD prior to the issuance of a grading permit. The equipment list shall be submitted periodically to ICAPCD to perform a NO_X analysis. ICAPCD shall utilize this list to calculate air emissions to verify that equipment

use does not exceed the significance thresholds. The Planning and Development Services Department and ICAPCD shall verify implementation of this measure.

AQ-2 **Fugitive Dust Control.** Pursuant to ICAPCD, all construction sites, regardless of size, must comply with the requirements contained within Regulation VIII – Fugitive Dust Control Measures. Whereas these Regulation VIII measures are mandatory and are not considered project environmental mitigation measures, the ICAPCD CEQA Handbook's required additional standard and enhanced mitigation measures listed below shall be implemented prior to and during construction. ICAPCD will verify implementation and compliance with these measures as part of the grading permit review/approval process.

ICAPCD Standard Measures for Fugitive Dust (PM_{10}) Control

- All disturbed areas, including bulk material storage, which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps, or other suitable material, such as vegetative ground cover.
- All on-site and off-site unpaved roads will be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.
- All unpaved traffic areas 1 acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.
- The transport of bulk materials shall be completely covered unless 6 inches of freeboard space from the top of the container is maintained with no spillage and loss of bulk material. In addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at delivery site after removal of bulk material.
- All track-out or carry-out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an urban area.
- Movement of bulk material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers, or by sheltering or enclosing the operation and transfer line.
- The construction of any new unpaved road is prohibited within any area with a population of 500 or more unless the road meets the definition of a temporary unpaved road. Any temporary unpaved road shall be effectively stabilized, and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants, and/or watering.

ICAPCD "Discretionary" Measures for Fugitive Dust (PM_{10}) Control

- Water exposed soil only in those areas where active grading and vehicle movement occurs with adequate frequency to control dust.
- Replace ground cover in disturbed areas as quickly as possible.
- Automatic sprinkler system installed on all soil piles.
- Vehicle speed for all construction vehicles shall not exceed 15 miles per hour on any unpaved surface at the construction site.
- Develop a trip reduction plan to achieve a 1.5 average vehicle ridership for construction employees.
- Implement a shuttle service to and from retail services and food establishments during lunch hours.

Standard Mitigation Measures for Construction Combustion Equipment

- Use of alternative fueled or catalyst equipped diesel construction equipment, including all off-road and portable diesel-powered equipment.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes as a maximum.
- Limit, to the extent feasible, the hours of operation of heavy-duty equipment and/or the amount of equipment in use.
- Replace fossil fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).

Enhanced Mitigation Measures for Construction Equipment

To help provide a greater degree of reduction of PM emissions from construction combustion equipment, ICAPCD recommends the following enhanced measures:

- Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak hour of vehicular traffic on adjacent roadways.
- Implement activity management (e.g., rescheduling activities to reduce short-term impacts).

AQ-3 **Dust Suppression.** The Project applicant shall employ a method of dust suppression such as water or chemical stabilization) approved by ICAPCD. All unpaved roads associated with construction shall be effectively stabilized of dust emissions using stabilizers/suppressant before the commencement of all construction phases. This will be conducted monthly at a rate of 0.1 gallon/square yard of chemical dust suppressant. The Project applicant shall apply chemical stabilization as directed by the product manufacturer to control dust between the panels as approved by ICAPCD, and other non-used areas (exceptions will be the paved entrance and parking area, and Fire

Department access/emergency entry/exit points as approved by Fire/Office of Emergency Services [OES] Department).

AQ-4 **Dust Suppression Management Plan.** Prior to any earthmoving activity, the Project applicant shall submit an Enhanced Dust Control Plan and obtain ICAPCD and Imperial County Planning and Development Services Department (ICPDS) approval.

AQ-5 **Speed Limit.** During construction and operation of the Project, the Project applicant shall limit the speed of all vehicles operating onsite on paved and unpaved roads to 15 miles per hour or less.

AQ-6 **Operational Dust Control Plan.** Prior to issuance of a Certificate of Occupancy, the applicant shall submit an operations dust control plan and obtain ICAPCD and ICPDS approval.

ICAPCD Rule 301 Operational Fees apply to any project applying for a building permit. At the time that building permits are submitted for the Project, ICAPCD shall review the project to determine if Rule 310 fees are applicable to the Project.

8.1.2 Cumulatively Considered Non-Attainment Pollutants

Threshold AQ-2: Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state air quality standards?

Construction

Construction-related activities are temporary, short-term sources of emissions. Construction emissions are estimated using the methods described in Section 6, Methodology, and are presented as an estimate of daily construction emissions (pounds per day) in Table 6. As discussed above in Threshold AQ-1 and summarized in Table 6, with implementation of Mitigation Measures AQ-1 through AQ-5, the Project's daily mitigated construction emissions would not exceed the ICAPCD's thresholds. Therefore, construction impacts associated with the cumulative considerable net increase of any criteria air pollutant emissions would be less than significant with mitigation.

Table 6. Unmitigated and Mitigated Construction Daily Maximum Criteria Air Pollutant Emissions
(lbs per day)

Construction Phase	Pounds/Day					
Unmitigated Daily Construction Criteria Air Pollutant Emissions	**VOC**	**NOx**	**CO**	**SO_2**	**PM 10**	**PM 2.5**
Phase 1: Site Preparation, Fencing, and Ingress/Egress (2026)	5.6	36.8	59.6	0.1	71.5	9.0
Phase 2: Civil Improvements - Grading/Roads/Earthwork (2026)	7.3	47.9	71.5	0.1	80.9	10.3
Phase 3: PV Panel & BESS Construction (2026)	11.4	51.6	160.2	0.1	79.3	10.8
Phase 3: PV Panel & BESS Construction (2027)	9.3	50.0	114.2	0.1	79.1	10.7
Phase 4: Testing & Commissioning (2027)	0.4	1.9	5.7	0.0	67.1	6.9
Phase 5: Decommissioning (2050)a	3.5	18.8	57.2	0.1	78.1	9.7
Overlapping Phases						
Phase 1 (2026) + Phase 2 (2026)	12.9	84.7	131.1	0.2	152.4	19.3
Maximum	**12.9**	**84.7**	**160.2**	**0.2**	**152.4**	**19.3**
ICAPCD Thresholds	75	100	550	N/A	150	N/A
Exceeds Thresholds?	**No**	**No**	**No**	**No**	**Yes**	**N/A**
Mitigated Daily Construction Criteria Air Pollutant Emissions	**VOC**	**NOx**	**CO**	**SO_2**	**PM 10**	**PM 2.5**
Phase 1: Site Preparation, Fencing, and Ingress/Egress (2026)	1.9	7.8	74.3	0.1	69.1	7.4
Phase 2: Civil Improvements - Grading/Roads/Earthwork (2026)	3.7	18.8	89.1	0.1	78.7	8.8
Phase 3: PV Panel & BESS Construction (2026)	8.5	24.9	166.1	0.1	77.7	9.8
Phase 3: PV Panel & BESS Construction (2027)	6.5	25.0	119.9	0.1	77.6	9.8
Phase 4: Testing & Commissioning (2027)	0.4	1.8	5.6	0.0	66.2	6.8
Phase 5: Decommissioning (2050)[a]	2.7	13.7	63.9	0.1	77.4	9.6
Overlapping Phases						
Phase 1 (2026) + Phase 2 (2026)	5.7	26.7	163.4	0.2	147.8	16.2
Maximum	**8.5**	**26.7**	**166.1**	**0.2**	**147.8**	**16.2**

Table 6. Unmitigated and Mitigated Construction Daily Maximum Criteria Air Pollutant Emissions
(lbs per day)

Construction Phase	Pounds/Day					
Unmitigated Daily Construction Criteria Air Pollutant Emissions	**VOC**	**NOx**	**CO**	**SO_2**	**PM 10**	**PM 2.5**
ICAPCD Thresholds	75	100	550	N/A	150	N/A
Exceeds Thresholds?	**No**	**No**	**No**	**No**	**No**	**N/A**

Notes:
a Decommissioning would occur at the end of operations. It was included with conservatively included with construction since similar equipment would be used.
CO = carbon monoxide, NO_X = oxides of nitrogen, PM_{10} = coarse particulate matter, $PM_{2.5}$ = fine particulate matter, SO_X = oxides of sulfur, VOC = volatile organic compounds , ICAPCD = Imperial County Air Pollution Control District

Operational

As previously discussed, it is assumed the Project would share O&M, substation, and/or transmission facilities with other adjacent PV solar and BESS projects or with any future nearby proposed renewable energy projects. During long-term operations of the Project, minimal amounts of criteria air pollutants would be generated from periodic vehicle trips for maintenance, inspections, and routine cleaning. However, these events are expected to be occasional and result in minimal emissions.

Although no significant air quality impact would occur during operation, the Project would be required to comply with Regulation VIII as detailed in Mitigation Measure AQ-2 that would further reduce fugitive dust emissions associated with the Project. In addition, implementation of Mitigation Measure AQ-5 would limit the speed of all vehicles operating onsite on dirt roads to 15 miles per hour or less and Mitigation Measure AQ-6 would ensure an Operational Dust Control Plan is implemented. Therefore, operational impacts associated with the cumulative considerable net increase of any criteria air pollutant emissions would be less than significant.

Mitigation Measures

Implement the following mitigation measures:

AQ-1 Construction Equipment

AQ -2 Fugitive Dust Control

AQ -3 Dust Suppression

AQ-4 Dust Suppression Management Plan

AQ-5 Speed Limit

AQ-6 Operational Dust Control Plan

8.1.3 Substantial Pollutant Concentrations

Threshold AQ-3: Would the Project expose sensitive receptors to substantial pollutant concentrations?

Sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. People most likely to be affected by air pollution include children, older adults, and people with cardiovascular and chronic respiratory diseases. Sensitive receptors include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (CARB 2024c). The nearest sensitive receptor is a residence located within the central portion of the Big Rock 2 Cluster North Site, in the southwest corner of the Jessup Road/W Campbell Road intersection. All other sensitive receptors are located further and would experience less air quality impacts.

Toxic Air Contaminants

Concentrations of TACs are also used as indicators of ambient air quality conditions. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

Intermittent construction activities associated with the Project would result in short-term emissions of diesel particulate matter, which the State has identified as a TAC. During construction, the exhaust of off-road heavy-duty diesel equipment would emit DPM during general construction activities, such as grading, building construction[2], and paving.

Construction

Temporary TAC emissions associated with DPM emissions from heavy construction equipment would occur during construction activities. According to OEHHA, health effects from TACs are described in terms of individual cancer risk based on a lifetime (i.e., 70-year) resident exposure duration. Given the temporary and short-term construction schedule (approximately 24 months), the Project and Project-related offsite improvements would not result in a long-term (i.e., lifetime or 70-year) exposure as a result of construction activities. The Project would be consistent with the applicable ICAPCD rules and regulations intended to reduce emissions from construction equipment and activities. The Project

[2] Conservatively includes construction of O&M building.

would comply with regulatory control measures including the CARB Air Toxics Control Measure (ATCM) that limits diesel powered equipment and vehicle idling to no more than 5 minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation that requires fleets to retire, replace, or repower of older, dirtier engines with newer emission-controlled models. Compliance with these would minimize emissions of TACs during construction. Although sensitive receptors, residential uses, are located within the Project site, construction is relatively short-term, anticipated at 24 months and would result in an overall low level of DPM concentrations in the Project site (Table 6). Furthermore, compliance with the aforementioned CARB ATCM anti-idling measure further minimizes DPM emissions at the Project site and Project-related offsite improvements.

The Project would also comply with best practices to limit exposure to Valley Fever. During excavation, grading, and other earth-moving activities, construction workers and nearby sensitive receptors have the potential to be exposed to Valley Fever. As this risk cannot be eliminated entirely, Valley Fever risk from construction-related dust from the Project will be partially mitigated by implementation of fugitive dust control measures within ICAPCD Regulation VIII.

Although there are sensitive receptors located within the Project site, compliance with ICAPCD Regulation VIII and the limited duration of construction activities would minimize Valley Fever exposures and impacts would be less than significant.

Operations

CARB recommends that health risk assessments be conducted for substantial sources of operational DPM emissions (e.g., truck stops and warehouse distribution facilities that generate more than 100 trucks per day or more than 40 trucks with operating transport refrigeration units) and has provided guidance for analyzing mobile source diesel emissions. The Project would not include any truck stop or warehouse distribution uses, and, as such, operations would generate only minor amounts of diesel emissions from mobile sources, such as delivery trucks and occasional maintenance. Project operations would not be considered a substantial source of diesel particulates. Furthermore, typical sources of hazardous TACs include industrial manufacturing processes, which the Project is not.

With respect to the use of consumer products and architectural coatings, the Project's land uses would not include installation of industrial-sized paint booths, emergency generators, or require extensive use of commercial or household cleaning products. Therefore, operational impacts from TACs would be less than significant.

Carbon Monoxide Hotspots

Construction

Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed federal and/or state standards for CO are termed CO "hotspots." CO transport is extremely limited and disperses rapidly with distance from the source. Under certain extreme meteorological conditions, however, CO concentrations near a congested roadway or intersection may reach unhealthy levels affecting sensitive receptors.

Projects contributing to adverse traffic impacts may result in the formation of a CO hotspot. Additional analysis of CO hotspot impacts would be conducted if a project would result in a significant impact or contribute to an adverse traffic impact at a signalized intersection that would potentially subject sensitive receptors to CO hotspots.

Title 40 of the Code of Federal Regulations, Section 93.123(c)(5), Procedures for Determining Localized CO, PM_{10}, and $PM_{2.5}$ Concentrations (Hot-Spot Analysis), states that "CO, PM_{10}, and $PM_{2.5}$ hot-spot analyses are not required to consider construction-related activities, which cause temporary increases in emissions. Each site which is affected by construction-related activities shall be considered separately, using established 'Guideline' methods. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site." Project construction would involve on-road vehicle trips from trucks and workers during construction. Construction activities would last approximately 24 months and would not require a project-level construction hotspot analysis.

Operations

Motor vehicles are a primary source of pollutants within the Project vicinity. Such hot spots are defined as locations where the ambient CO concentrations exceed the State or federal ambient air quality standards. CO is produced in greatest quantities from vehicle combustion and is usually concentrated at or near ground level because it does not readily disperse into the atmosphere. As a result, potential air quality impacts to sensitive receptors are assessed through an analysis of localized CO concentrations.

As previously mentioned, minimal periodic visits would be conducted for on-site equipment inspections, monitoring and testing. Therefore, since only limited vehicle trips are anticipated the Project would not result in the creation of a CO hotspot and would not expose sensitive receptors to substantial pollutant concentrations associated with a CO hotspot. The Project's impacts would be less than significant.

8.1.4 Other Emissions (Odors)

Threshold AQ-4: Would the Project result in other emissions (such as those leading to odors adversely affecting a substantial number of people?

Land uses typically producing objectionable odors include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The Project would not include any of these land uses. Therefore, impacts associated with odors during operations would be less than significant.

During construction, odors would come predominantly from construction equipment, which would cease immediately after construction is complete. Furthermore, the Project would be required to comply with California Code of Regulations, Title 13, Sections 2449(d)(3) and 2485, which minimizes the idling time of construction equipment either by shutting it off when not in use or by reducing the time of idling to no more than five minutes. This would further reduce the detectable odors from heavy-duty equipment exhaust. As discussed, construction- related odors would be short-term and cease upon Project completion. Therefore, impacts associated odors during construction would be less than significant.

The Project would not create any new sources of odor during operation. Therefore, odors associated with Project operations would be less than significant.

8.2 Greenhouse Gas Impacts

8.2.1 Construction Emissions

Threshold GHG-1: Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

As explained above, the Project's GHG emissions during construction were calculated for each year of construction activity. The Project's estimated GHG emissions generated during construction by year are presented in Table 7. Although construction-related GHGs are one-time emissions, any assessment of project emissions should include construction emissions. AEP recommends that a project's construction-related GHG emissions be amortized over the project's 30-year lifetime in order to include these emissions as part of the project's annualized lifetime total emissions, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies. As indicated in Table 7, Project construction emissions during the approximate 24-month construction period would generate an estimated 3,357 $MTCO_2e$, or approximately 112 $MTCO_2e$ annually amortized over a 30-year period. A complete listing of the equipment by phase,

emission factors, and calculation parameters used in this analysis is included within the emissions calculation worksheets that are provided in Appendix B.

Table 7. Annual Construction GHG Emissions ($MTCO_2e$ per year)

Year/Description	GHG Emissions
2026	2,666
2027	691
2050	2,016
Project Total	3,357
Amortized Construction Emissions	**112**

Source: Appendix B
Note:
Totals may not add up due to rounding.

8.2.2 Operational Emissions

During operation of the Project, minimal amounts of emissions could be generated from maintenance operations, including routine cleaning and from periodic visits from service vehicles.

As previously mentioned, it is assumed the Project would share O&M, substation, and/or transmission facilities with other adjacent PV solar and BESS projects that have been approved and entitled by Imperial County, or with any future nearby proposed renewable energy projects. Additionally, there are no expected sources of stationary emission sources (i.e. emergency generators). Therefore, minimal additional emissions would be generated from vehicle trips by worker staff for periodic inspections or maintenance purposes and operational GHG emissions would be less than significant.

As previously noted, the ICAPCD has not established quantitative significance thresholds for evaluating GHG emissions but rather has relied upon the SCAQMD quantitative thresholds. As shown in Table 7, the estimated total GHG emissions for the Project would not exceed the SCAQMD threshold of 10,000 MT CO_2e per year. Projects below this significance criterion would have a minimal contribution to global emission and are considered to have less than significant impacts. Therefore, construction and operational GHG impacts associated with the Project would be less than significant.

8.2.3 Conflict with State and Local Plans, Policies, or Regulations

Threshold GHG-2: Would the Project conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?

The Project would generate an incremental contribution to and a cumulative increase in GHG emissions. A specific discussion regarding potential GHG emissions associated with the construction and operational phases of the Project is provided above. As shown in Table 7, the Project's GHG emissions would not exceed the significance threshold of 10,000 MT CO_2e per year.

2022 Scoping Plan Update

The 2022 Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32 and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions.

Many of the measures and programs included in the 2022 Scoping Plan would result in the reduction of Project-related GHG emissions, including GHG emission reductions through increased energy efficiency and renewable energy production (SB 350), reduction in carbon intensity of transportation fuels (low-carbon fuel standard), and the accelerated efficiency and electrification of the statewide vehicle fleet (Mobile Source Strategy). Although the Project would introduce GHGs into the environment, once construction is complete, the Project would be a producer of renewable energy, which generates substantially less GHG emissions compared with the more common types of fossil-fueled energy generation facilities. It is anticipated the Project would generate up to a combined 500 MW of alternating current (AC) on a daily basis and up to 500 MW of battery storage. The contribution of renewable resource energy production to meet the goals of the Renewable Portfolio Standard (Scoping Plan Measure E-3) and would result in a net cumulative reduction of GHG emissions, a key environmental benefit (Scoping Plan Measure E-3, Renewable Portfolio Standard, of the Climate Change Scoping Plan requires that all investor-owned utility companies generate 60 percent of their energy demand from renewable sources by year 2030). Therefore, the short-term minor generation of GHG emissions during construction, which is necessary to create a new, low-GHG-emitting power-generating facility, as well as the negligible amount generated during ongoing maintenance operations, would be more than offset by GHG emission reductions associated with solar-generated energy during operation. As such, the Project is consistent with measures in the 2022 Scoping Plan.

2020-2045 RTP/SCS

At the regional level, the 2020–2045 RTP/SCS is an applicable plan adopted for the purpose of reducing GHGs. Typically, a project would be consistent with the RTP/SCS if the project does not exceed the underlying growth assumptions within the RTP/SCS. As previously discussed, the Project would include 4 to 10 new employees and would be consistent with the growth projections for the air plan. Therefore, the Project would not conflict with implementation of the strategies identified in the 2020 RTP/SCS to reduce GHG emissions.

Imperial Valley Regional Climate Action Plan

As previously mentioned, the RCAP has not been adopted nor been qualified in accordance with CEQA Guidelines. However, the Project would be consistent with Strategy E-2: Increase Renewable and Zero-Carbon Energy Generation, and Strategy E-3: Develop Clean Energy Jobs within the RCAP, as it is a solar project and would generate 4 to 10 new jobs. Therefore, the Project would not conflict with the RCAP.

Given the Project's consistency analysis with applicable GHG plans, policies and regulations adopted for the purpose of reducing GHG emissions and emissions below the significance threshold, impacts would be less than significant.

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Appendix A. Pollutant-Specific Overview

Criteria Air Pollutants

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards to protect public health and welfare. There are six criteria air pollutants: Ozone (O_3); Particulate Matter, which consists of particulate matter 10 micrometers and smaller (PM_{10}) and particulate matter 2.5 micrometers and smaller ($PM_{2.5}$); Carbon Monoxide (CO); Nitrogen Dioxide (NO_2); Sulfur Dioxide (SO_2); and Lead (Pb).

Principal characteristics and possible health and environmental effects of each criteria air pollutant are described below.

Ozone

O_3, also known as “smog”, is not emitted directly into the atmosphere. Instead, it is a secondary pollutant that is formed when volatile organic compounds (VOCs) or reactive organic gases (ROGs) and nitrogen oxides (NO_X) (both byproducts of the internal combustion engine exhaust) undergo chemical reactions in the presence of sunlight. ROG and NO_X are known as O_3 precursors.

O_3 poses a higher risk to those already suffering from respiratory diseases (e.g., asthma), children, older adults, and people who are active outdoors. In addition, people with certain genetic characteristics, and people with reduced intake of certain nutrients, such as vitamins C and E, are at greater risk from O_3 exposure (United Stated Environmental Protection Agency [USEPA] 2023a).

Long-term exposure to O_3 is linked to aggravation of asthma and is likely to be one of many causes of asthma development. Elevated concentrations of O_3 can result in deaths from respiratory causes (USEPA 2024c).

O_3 can also affect sensitive vegetation and ecosystems, including forests, parks, wildlife refuges and wilderness areas. In particular, O_3 can harm sensitive vegetation during the growing season. Exposure to O_3 can result in reduced photosynthesis, stunted growth, increased risk of diseases, and leaf discoloration (USEPA 2024d).

Particulate Matter

Particulate matter consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Particulate matter includes PM_{10}, which are inhalable coarse particles with a diameter of 10 micrometers or less, and $PM_{2.5}$, which are inhalable fine particles with a diameter of 2.5 micrometers or less. Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Particulate matter may also form in the atmosphere as a result of complex reactions of chemicals such as sulfur dioxide and nitrogen oxides, which are pollutants emitted from power plants, industries and automobiles.

Particles less than 2.5 micrometers in diameter pose the greatest risk to health because these particles can get deep into the lungs and may even enter the bloodstream. People with heart or lung diseases, children, and older adults are the most likely to be affected by particle pollution exposure. Health effects of exposure to particulate matter include (USEPA 2024e): premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.

In addition to human health effects, particulate matter can also cause environmental effects such as visibility impairment, environmental damage, and aesthetic damage. $PM_{2.5}$ is the main cause of reduced visibility (haze) in parts of the U.S., including many national parks and wilderness areas. Particles can be carried over long distances by wind and then settle on ground or water. Effects of this settling include making lakes and streams acidic, changing the nutrient balance in coastal waters and large river basins, depleting the nutrients in soil, damaging sensitive forests and farm crops, affecting the diversity of ecosystems, and contributing to acid rain effects. Particulate matter can also stain and damage stone and other materials, including culturally important objects such as statues and monuments (USEPA 2024e).Carbon Monoxide

CO is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections.

Breathing air with a high concentration of CO reduces the amount of oxygen that can be transported in the blood stream to critical organs like the heart and brain. This condition is especially critical for people with cardiovascular or chronic lung diseases. At very high levels, which are possible indoors or in other enclosed environments, CO can cause dizziness, confusion, unconsciousness, and death (USEPA 2024f).

Nitrogen Dioxide

NO_2 is a major component of the group of highly reactive gases known as oxides of nitrogen or NO_X, which is an O_3 precursor. NO_2 primarily gets in the air from the burning of fuel. NO_2 forms from emissions from cars, trucks and buses, power plants, and off-road equipment.

Breathing air with a high concentration of NO_2 can irritate airways in the human respiratory system. Short-term exposure to NO_2 can aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing), hospital admissions and visits to emergency rooms. Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with

asthma, as well as children and the elderly are generally at greater risk for the health effects of NO_2 (USEPA 2024g).

NO_2 and other NO_X interact with water, oxygen, and other chemicals in the atmosphere to form acid rain, which can harm sensitive ecosystems such as lakes and forests. NO_X can make the air hazy and affect visibility. NO_X also contributes to nutrient pollution in coastal waters (USEPA 2024g).

Sulfur Dioxide

SO_2 is the component of greatest concern for the group of gaseous sulfur oxides (SO_X). The largest source of SO_2 in the atmosphere is the burning of fossil fuels by power plants and other industrial facilities. Smaller sources of SO_2 emissions include industrial processes such as extracting metal from ore; natural sources such as volcanoes; and locomotives, ships and other vehicles and heavy equipment that burn fuel with a high sulfur content.

Short-term exposures to SO_2 can harm the human respiratory system and make breathing difficult. These effects of SO_2 are of particular concern to people with asthma, particularly children. SO_2 emissions can contribute to particulate matter pollution that can penetrate deeply into the lungs and contribute to health effects. SO_X can harm trees and plants by damaging foliage and decreasing growth. SO_2 and other SO_X can contribute to acid rain that is harmful for sensitive ecosystems. SO_2 and other SO_X can react with other compounds in the atmosphere to form fine particles that reduce visibility (haze) (USEPA 2024h).

Lead

Major sources of Pb in the air are ore and metals processing and piston-engine aircraft operating on leaded aviation fuel. Other sources are waste incinerators, utilities, and lead-acid battery manufacturers. The highest air concentrations of Pb are usually found near lead smelters.

Depending on the level of exposure, Pb can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems and the cardiovascular system. Pb exposure also affects the oxygen carrying capacity of the blood. Infants and young children are especially sensitive to Pb exposures, which may contribute to behavioral problems, learning deficits and lowered IQ. Elevated levels of Pb in the environment can result in decreased growth and reproduction in plants and animals, and neurological effects in vertebrates (USEPA 2024i).

Mobile Source Air Toxics

Toxic air contaminants (TACs) are those pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects. Examples of TACs include benzene, which is found in gasoline; perchloroethylene, which is emitted from some dry-cleaning facilities; and methylene chloride, which is used as a solvent and paint

stripper by a number of industries. Examples of other TACs include dioxin, asbestos, toluene, and metals such as cadmium, mercury, chromium, and lead compounds.

Diesel engines emit a complex mixture of pollutants, including very small carbon particles, or "soot" coated with numerous organic compounds, known as diesel particulate matter (DPM). DPM contains more than 40 cancer-causing substances, most of which are readily adsorbed onto the soot particles (CARB 2024d). In 1998, California identified DPM as a TAC based on its potential to cause cancer. People living and working in cities and industrial areas and near heavy truck or train traffic are most likely to be exposed to DPM. Exposure to DPM can contribute to a range of health problems. These include irritation to the eyes, throat and nose, heart and lung disease, and lung cancer. In addition to its health effects, DPM can contribute to haze that reduces visibility by obscuring outdoor views and decreasing the distance over which one can distinguish features across the landscape. DPM also plays an important role in climate change. A large proportion of DPM is composed of black carbon or soot, which is a potent contributor to global warming. Greenhouse Gas Emissions

Greenhouse gases (GHGs) are gases that warm the Earth by trapping heat in the atmosphere. The most important GHGs directly emitted by humans include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases.

Different GHGs can have different effects on the Earth's warming. The Global Warming Potential (GWP) was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, typically a 100-year time horizon, relative to the emissions of 1 ton of CO_2. (USEPA 2024j). Gases with a higher GWP absorb more energy, per ton emitted, than gases with a lower GWP, and thus contribute more to warming Earth. The major GHGs are described below.

Carbon Dioxide

CO_2 is the primary GHG emitted through human activities. CO_2 is naturally present in the atmosphere as part of the Earth's carbon cycle (the natural circulation of carbon among the atmosphere, oceans, soil, plants, and animals). Human activities are altering the carbon cycle – both by adding more CO_2 to the atmosphere and by influencing the ability of natural sinks, like forests and soils, to remove and store CO_2 from the atmosphere. While CO_2 emissions come from a variety of natural sources, human-related emissions are responsible for the increase that has occurred in the atmosphere since the industrial revolution. The main sources of CO_2 emissions in the U.S. are transportation, electricity, industry, and residential and commercial. The GWP of CO_2, by definition, is 1 (USEPA 2024j).

Methane

In 2021, CH_4 accounted for 12% of all U.S. GHG emissions from human activities (USEPA 2024j). Human activities emitting CH_4 include energy production, industrial processes, agriculture, land use,

and waste management. CH_4 is emitted during the production, processing, storage, and transport of coal, natural gas, and oil. CH_4 is emitted from raising domestic livestock such as cattle, swine, sheep, and goats that produce CH_4 as part of their normal digestive process. In addition, CH_4 is generated when animal manure is stored or managed in holding tanks. CH_4 is also generated in landfills as municipal waste decomposes and in the treatment of wastewater. CH_4 is also emitted from a number of natural sources such as wetlands, reservoirs and ponds, termites, oceans, sediments, volcanoes, and wildfires. The GWP of CH_4 is 28 (USEPA 2024j).

Nitrous Oxide

In 2021, N_2O accounted for 6% of all U.S. GHG emissions from human activities (USEPA 2024j). N_2O is naturally present in the atmosphere as part of the Earth's nitrogen cycle (natural circulation of nitrogen among the atmosphere, plants, animals, and microorganisms that live in soil and water). Human activities such as agriculture, fuel combustion, wastewater management, and industrial processes are increasing the amount of N_2O in the atmosphere. N_2O is emitted during combustion of fuels. N_2O is so generated from treatment of domestic wastewater. The GWP of N_2O is 265 based on IPCC's Fifth Assessment Report (IPCC 2014).

Fluorinated Gases

Unlike many other GHGs, fluorinated gases have no significant natural sources and come almost entirely from human-related activities. They are emitted through their use as substitutes for O_3-depleting substances (e.g., as refrigerants) and through a variety of industrial processes such as aluminum and semiconductor manufacturing. Many fluorinated gases have very GWPs relative to other GHGs, so small atmospheric concentrations can nevertheless have large effects on global temperatures. Fluorinated gases can also have long atmospheric lifetimes—in some cases, lasting thousands of years. Like other long-lived greenhouse gases, most fluorinated gases are well-mixed in the atmosphere, spreading around the world after they are emitted. In general, fluorinated gases are the most potent and longest lasting type of greenhouse gases emitted by human activities. There are four main categories of fluorinated gases – hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3). The GWP of HFCs is up to 12,400, PFCs is up to 11,100, NF_3 is 16,100, and SF_6 is 23,500 based on IPCC's Fifth Assessment Report (IPCC 2014).

Appendix B. Construction and Operational Emissions

CalEEMod Input

Project Name:	Big Rock 2
Project Location:	Imperial County APCD
CEC Climate Zone:	19
Land Use Setting:	Rural
Operational Year:	2027
Utility Company	Imperial Irrigtion District/SoCal Gas

Land Use

Land Use Type	Land Use Subtype	Unit Amount	Size Metric	Lot Acreage	SF
Commercial	General Office space	0.2	Acres	0.2	8,712.00
Parking Lot		0.8	Acre	0.8	34,848.00
Other Non-Asphalt Surfaces		1848	Acre	1848	80,498,880.00
		1849			

Construction Schedule

Construction Phase Name	Phase Type	Start Date	End Date	# Days/Week	# one-way worker trips/d	# one-way vendor trips/day	# Total haul trips	Worker Trip Length	Vendor Trip Length	Haul Trip Length
Phase 1: Site Preparation, Fencing, and Ingress/Egress	Site Preparation	4/8/2026	7/8/2026	6	148	32	0	16	15	0
Phase 2: Civil Improvements - Grading/Roads/Earthwork	Grading	4/8/2026	7/8/2026	6	232	32	2	16	15	30
Phase 3: PV Panel & BESS Construction	Building Construction	7/11/2026	3/1/2027	6	1000	32	0	16	15	0
Phase 4: Testing & Commissioning	Building Construction	4/5/2027	10/2/2027	6	58	32	0	16	15	0
Phase 5: Decommissioning	Building Construction	1/1/2050	11/23/2050	6	1000	32	0	16	15	0

Notes:

6	# of days per week.
Varies	daily construction workers

Trip lengths for worker and vendor provided by applicant.
2 max daily haul trucks for debris haul (civil).

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Phase 1	Crawler Tractors	Diesel	Average	4	5	84	0.37
	Graders	Diesel	Average	4	6	148	0.41
	Off-Highway Trucks	Diesel	Average	4	7	376	0.38
	Plate Compactors	Diesel	Average	4	4	8	0.43
	Rubber Tired Loaders	Diesel	Average	4	8	150	0.36
	Scrapers	Diesel	Average	4	4	423	0.48
Phase 2	Graders	Diesel	Average	4	6	148	0.41
	Rubber Tired Loaders	Diesel	Average	1	7	84	0.37
	Scrapers	Diesel	Average	4	4	367	0.4
	Crawler Tractors	Diesel	Average	4	8	87	0.43
	Off-Highway Trucks	Diesel	Average	4	7	376	0.38
	Plate Compactors	Diesel	Average	4	4	8	0.43
Phase 3	Air Compressors	Diesel	Average	4	8	84	0.37
	Crawler Tractors	Diesel	Average	4	4	367	0.29
	Generator Sets	Diesel	Average	8	8	82	0.2
	Other Construction Equipment	Diesel	Average	4	2	82	0.42
	Rough Terrain Forklifts	Diesel	Average	8	5	96	0.4
	Rubber Tired Loaders	Diesel	Average	8	5	150	0.36
	Trenchers	Diesel	Average	8	5	40	0.5
	Other Construction Equipment	Diesel	Average	4	4	82	0.42
Phase 4	N/A						
Phase 5	Air Compressors	Diesel	Average	4	8	84	0.37
	Crawler Tractors	Diesel	Average	4	4	367	0.29
	Generator Sets	Diesel	Average	8	8	82	0.2
	Other Construction Equipment	Diesel	Average	4	2	82	0.42
	Rough Terrain Forklifts	Diesel	Average	8	5	96	0.4

Daily Project Construction Criteria Air Pollutant Emissions

Construction Phase	Pounds/Day					
Unmitigated Daily Construction Criteria Air Pollutant Emissions	**VOC**	**NOx**	**CO**	**SO_2**	**PM10**	**PM2.5**
Phase 1: Site Preparation, Fencing, and Ingress/Egress (2026)	5.6	36.8	59.6	0.1	71.5	9.0
Phase 2: Civil Improvements - Grading/Roads/Earthwork (2026)	7.3	47.9	71.5	0.1	80.9	10.3
Phase 3: PV Panel & BESS Construction (2026)	11.4	51.6	160.2	0.1	79.3	10.8
Phase 3: PV Panel & BESS Construction (2027)	9.3	50.0	114.2	0.1	79.1	10.7
Phase 4: Testing & Commissioning (2027)	0.4	1.9	5.7	0.0	67.1	6.9
Phase 5: Decommissioning (2050)	3.5	18.8	57.2	0.1	78.1	9.7
Overlapping Phases						
Phase 1 (2026) + Phase 2 (2026)	12.9	84.7	131.1	0.2	152.4	19.3
Maximum	**12.9**	**84.7**	**160.2**	**0.2**	**152.4**	**19.3**
ICAPCD Thresholds	75	100	550	N/A	150	N/A
Exceeds Thresholds?	**No**	**No**	**No**	**No**	**Yes**	**N/A**
Mitigated Daily Construction Criteria Air Pollutant Emissions	**Pounds/Day**					
Phase 1: Site Preparation, Fencing, and Ingress/Egress (2026)	1.9	7.8	74.3	0.1	69.1	7.4
Phase 2: Civil Improvements - Grading/Roads/Earthwork (2026)	3.7	18.8	89.1	0.1	78.7	8.8
Phase 3: PV Panel & BESS Construction (2026)	8.5	24.9	166.1	0.1	77.7	9.8
Phase 3: PV Panel & BESS Construction (2027)	6.5	25.0	119.9	0.1	77.6	9.8
Phase 4: Testing & Commissioning (2027)	0.4	1.8	5.6	0.0	66.2	6.8
Phase 5: Decommissioning (2050)	2.7	13.7	63.9	0.1	77.4	9.6
Overlapping Phases						
Phase 1 (2026) + Phase 2 (2026)	5.7	26.7	163.4	0.2	147.8	16.2
Maximum	**8.5**	**26.7**	**166.1**	**0.2**	**147.8**	**16.2**
ICAPCD Thresholds	75	100	550	N/A	150	N/A
Exceeds Thresholds?	**No**	**No**	**No**	**No**	**No**	**N/A**

Notes:

CO = carbon monoxide, NO_X = oxides of nitrogen, PM_{10} = coarse particulate matter, $PM_{2.5}$ = fine particulate matter, SO_X = oxides of sulfur, VOC = volatile organic compounds, ICAPCD = Imperial County Air Pollution Control District

Annual Construction GHG Emissions

Construction	Metric Tons			
	CO_2	CH_4	N_2O	CO_2e
2026	2722	0.1	0.1	2750
2027	709	0.0	0.0	720
2050	2005	0.0	0.0	2,016
Total Unmitigated	3431.59	0.1	0.1	3470
Total Amortized Over 30 Years				**116**
2026	2638	0.1	0.1	2666
2027	680	0.0	0.0	691
2050	2005	0.0	0.0	2,016
Total Mitigated	3318	0.132	0.11	3357
Total Amortized Over 30 Years				**112**

Notes:

CO_2 = carbon dioxide, CH_4 = methane, N_2O = nitrous oxide, CO_2e = carbon dioxide equivalent

Big Rock 2026 v2 Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Big Rock 2026 v2
Construction Start Date	4/8/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.30
Precipitation (days)	4.80
Location	32.76641676498413, -115.72434681843731
County	Imperial
City	Unincorporated
Air District	Imperial County APCD
Air Basin	Salton Sea
TAZ	5605
EDFZ	19
Electric Utility	Imperial Irrigation District
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
General Office Building	3.20	1000sqft	0.20	3,200	0.00	0.00	—	—
Parking Lot	20.0	Space	0.80	0.00	0.00	0.00	—	—

Other Non-Asphalt Surfaces	1.00	Acre	1,848	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers
Construction	C-10-C	Water Unpaved Construction Roads

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	15.1	12.9	84.7	160	0.24	4.06	148	152	3.74	15.5	19.3	—	30,685	30,685	1.15	0.80	46.6	30,976
Mit.	9.33	8.53	26.7	166	0.24	0.86	147	148	0.83	15.4	16.2	—	30,685	30,685	1.15	0.80	46.6	30,976
% Reduced	38%	34%	69%	-4%	—	79%	1%	3%	78%	1%	16%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	11.7	10.1	52.5	120	0.12	1.64	77.7	79.3	1.51	9.33	10.8	—	23,401	23,401	1.03	0.74	1.21	23,647
Mit.	8.04	7.22	25.8	126	0.11	0.61	77.1	77.7	0.58	9.27	9.84	—	22,155	22,155	0.98	0.73	1.21	22,397
% Reduced	31%	29%	51%	-5%	13%	63%	1%	2%	62%	1%	9%	—	5%	5%	5%	1%	—	5%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	8.09	7.00	39.8	80.7	0.10	1.55	63.1	64.6	1.43	7.09	8.52	—	16,444	16,444	0.66	0.47	10.5	16,612

Mit.	4.68	4.25	16.4	90.1	0.09	0.44	62.5	63.0	0.42	7.04	7.45	—	15,934	15,934	0.64	0.47	10.5	16,101
% Reduced	42%	39%	59%	-12%	7%	72%	1%	3%	71%	1%	13%	—	3%	3%	3%	1%	—	3%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.48	1.28	7.27	14.7	0.02	0.28	11.5	11.8	0.26	1.29	1.55	—	2,722	2,722	0.11	0.08	1.73	2,750
Mit.	0.85	0.78	2.99	16.4	0.02	0.08	11.4	11.5	0.08	1.28	1.36	—	2,638	2,638	0.11	0.08	1.73	2,666
% Reduced	42%	39%	59%	-12%	7%	72%	1%	3%	71%	1%	13%	—	3%	3%	3%	1%	—	3%

2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	15.1	12.9	84.7	160	0.24	4.06	148	152	3.74	15.5	19.3	—	30,685	30,685	1.15	0.80	46.6	30,976
2027	0.43	0.38	1.75	5.61	0.01	0.02	66.5	66.5	0.02	6.78	6.80	—	2,180	2,180	0.05	0.23	5.47	2,254
2050	3.92	3.48	18.8	57.2	0.07	0.39	77.7	78.1	0.35	9.33	9.68	—	16,718	16,718	0.28	0.25	1.56	16,801
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	11.7	10.1	52.5	120	0.12	1.64	77.7	79.3	1.51	9.33	10.8	—	23,401	23,401	1.03	0.74	1.21	23,647
2027	10.7	9.27	50.0	114	0.12	1.44	77.7	79.1	1.33	9.33	10.7	—	23,182	23,182	1.03	0.74	1.09	23,428
2050	3.76	3.32	18.9	43.1	0.07	0.39	77.7	78.1	0.35	9.33	9.68	—	15,144	15,144	0.28	0.25	0.04	15,226
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	8.09	7.00	39.8	80.7	0.10	1.55	63.1	64.6	1.43	7.09	8.52	—	16,444	16,444	0.66	0.47	10.5	16,612
2027	1.77	1.54	7.80	19.6	0.02	0.21	38.9	39.1	0.20	4.16	4.36	—	4,283	4,283	0.16	0.20	3.58	4,350
2050	2.90	2.57	14.5	36.7	0.05	0.30	58.9	59.2	0.27	7.08	7.35	—	12,113	12,113	0.22	0.19	0.52	12,176
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2026	1.48	1.28	7.27	14.7	0.02	0.28	11.5	11.8	0.26	1.29	1.55	—	2,722	2,722	0.11	0.08	1.73	2,750
2027	0.32	0.28	1.42	3.58	< 0.005	0.04	7.09	7.13	0.04	0.76	0.80	—	709	709	0.03	0.03	0.59	720
2050	0.53	0.47	2.64	6.70	0.01	0.05	10.7	10.8	0.05	1.29	1.34	—	2,005	2,005	0.04	0.03	0.09	2,016

2.3. Construction Emissions by Year, Mitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	9.33	8.53	26.7	166	0.24	0.86	147	148	0.83	15.4	16.2	—	30,685	30,685	1.15	0.80	46.6	30,976
2027	0.43	0.38	1.75	5.61	0.01	0.02	66.1	66.2	0.02	6.74	6.77	—	2,180	2,180	0.05	0.23	5.47	2,254
2050	2.91	2.72	13.7	63.9	0.07	0.34	77.0	77.4	0.31	9.27	9.58	—	16,718	16,718	0.28	0.25	1.56	16,801
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	8.04	7.22	25.8	126	0.11	0.61	77.1	77.7	0.58	9.27	9.84	—	22,155	22,155	0.98	0.73	1.21	22,397
2027	7.31	6.55	25.0	120	0.11	0.55	77.1	77.6	0.52	9.27	9.78	—	21,936	21,936	0.98	0.73	1.09	22,178
2050	2.75	2.56	13.8	49.8	0.07	0.34	77.0	77.4	0.31	9.27	9.58	—	15,144	15,144	0.28	0.25	0.04	15,226
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	4.68	4.25	16.4	90.1	0.09	0.44	62.5	63.0	0.42	7.04	7.45	—	15,934	15,934	0.64	0.47	10.5	16,101
2027	1.29	1.16	4.26	20.5	0.02	0.09	38.6	38.7	0.08	4.14	4.22	—	4,108	4,108	0.15	0.20	3.58	4,174
2050	2.13	1.99	10.5	41.9	0.05	0.26	58.4	58.7	0.24	7.04	7.28	—	12,113	12,113	0.22	0.19	0.52	12,176
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.85	0.78	2.99	16.4	0.02	0.08	11.4	11.5	0.08	1.28	1.36	—	2,638	2,638	0.11	0.08	1.73	2,666
2027	0.24	0.21	0.78	3.73	< 0.005	0.02	7.05	7.07	0.01	0.76	0.77	—	680	680	0.03	0.03	0.59	691
2050	0.39	0.36	1.92	7.64	0.01	0.05	10.7	10.7	0.04	1.28	1.33	—	2,005	2,005	0.04	0.03	0.09	2,016

3. Construction Emissions Details

3.1. Phase 1 (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.52	4.64	34.3	44.7	0.09	1.86	—	1.86	1.71	—	1.71	—	9,898	9,898	0.40	0.08	—	9,932
Dust From Material Movement	—	—	—	—	—	—	1.31	1.31	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	0.02	0.02	0.35	0.26	< 0.005	< 0.005	1.44	1.44	< 0.005	0.14	0.15	—	72.1	72.1	< 0.005	0.01	0.07	75.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.19	1.00	7.42	9.68	0.02	0.40	—	0.40	0.37	—	0.37	—	2,142	2,142	0.09	0.02	—	2,150
Dust From Material Movement	—	—	—	—	—	—	0.28	0.28	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.08	0.06	< 0.005	< 0.005	0.31	0.31	< 0.005	0.03	0.03	—	15.7	15.7	< 0.005	< 0.005	0.01	16.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	0.22	0.18	1.35	1.77	< 0.005	0.07	—	0.07	0.07	—	0.07	—	355	355	0.01	< 0.005	—	356
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.06	0.06	< 0.005	0.01	0.01	—	2.60	2.60	< 0.005	< 0.005	< 0.005	2.73
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.95	0.89	0.75	14.0	0.00	0.00	1.67	1.67	0.00	0.39	0.39	—	1,937	1,937	0.08	0.07	6.35	1,965
Vendor	0.06	0.05	1.41	0.57	0.01	0.02	65.2	65.3	0.02	6.56	6.59	—	1,435	1,435	0.02	0.20	3.65	1,497
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.16	0.18	2.18	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	381	381	0.02	0.01	0.59	386
Vendor	0.01	0.01	0.33	0.12	< 0.005	< 0.005	13.9	13.9	< 0.005	1.40	1.41	—	311	311	< 0.005	0.04	0.34	324
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.40	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	63.1	63.1	< 0.005	< 0.005	0.10	64.0
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	2.54	2.54	< 0.005	0.26	0.26	—	51.4	51.4	< 0.005	0.01	0.06	53.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Phase 1 (2026) - Mitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.01	1.00	5.34	59.5	0.09	0.21	—	0.21	0.20	—	0.20	—	9,898	9,898	0.40	0.08	—	9,932
Dust From Material Movement	—	—	—	—	—	—	1.31	1.31	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	0.02	0.02	0.35	0.26	< 0.005	< 0.005	0.65	0.65	< 0.005	0.07	0.07	—	72.1	72.1	< 0.005	0.01	0.07	75.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.22	1.15	12.9	0.02	0.04	—	0.04	0.04	—	0.04	—	2,142	2,142	0.09	0.02	—	2,150
Dust From Material Movement	—	—	—	—	—	—	0.28	0.28	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.01	< 0.005	0.08	0.06	< 0.005	< 0.005	0.14	0.14	< 0.005	0.01	0.01	—	15.7	15.7	< 0.005	< 0.005	0.01	16.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.21	2.35	< 0.005	0.01	—	0.01	0.01	—	0.01	—	355	355	0.01	< 0.005	—	356
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.01	0.01	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	2.60	2.60	< 0.005	< 0.005	< 0.005	2.73
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.95	0.89	0.75	14.0	0.00	0.00	1.67	1.67	0.00	0.39	0.39	—	1,937	1,937	0.08	0.07	6.35	1,965
Vendor	0.06	0.05	1.41	0.57	0.01	0.02	65.2	65.3	0.02	6.56	6.59	—	1,435	1,435	0.02	0.20	3.65	1,497
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.16	0.18	2.18	0.00	0.00	0.36	0.36	0.00	0.08	0.08	—	381	381	0.02	0.01	0.59	386
Vendor	0.01	0.01	0.33	0.12	< 0.005	< 0.005	13.9	13.9	< 0.005	1.40	1.41	—	311	311	< 0.005	0.04	0.34	324
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.40	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	63.1	63.1	< 0.005	< 0.005	0.10	64.0
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	2.54	2.54	< 0.005	0.26	0.26	—	51.4	51.4	< 0.005	0.01	0.06	53.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Phase 2 (2026) - Unmitigated

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

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

Off-Road Equipment	6.95	5.83	44.8	48.7	0.12	2.15	—	2.15	1.98	—	1.98	—	12,616	12,616	0.51	0.10	—	12,659
Dust From Material Movement	—	—	—	—	—	—	1.52	1.52	—	0.16	0.16	—	—	—	—	—	—	—
Onsite truck	0.02	0.01	0.28	0.21	< 0.005	< 0.005	1.16	1.16	< 0.005	0.12	0.12	—	57.7	57.7	< 0.005	0.01	0.06	60.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.26	9.69	10.5	0.03	0.47	—	0.47	0.43	—	0.43	—	2,731	2,731	0.11	0.02	—	2,740
Dust From Material Movement	—	—	—	—	—	—	0.33	0.33	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.06	0.05	< 0.005	< 0.005	0.25	0.25	< 0.005	0.02	0.02	—	12.6	12.6	< 0.005	< 0.005	0.01	13.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.27	0.23	1.77	1.92	< 0.005	0.08	—	0.08	0.08	—	0.08	—	452	452	0.02	< 0.005	—	454
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.05	0.05	< 0.005	< 0.005	< 0.005	—	2.08	2.08	< 0.005	< 0.005	< 0.005	2.18
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.49	1.39	1.17	22.0	0.00	0.00	2.62	2.62	0.00	0.61	0.61	—	3,037	3,037	0.12	0.10	9.95	3,081
Vendor	0.06	0.05	1.41	0.57	0.01	0.02	65.2	65.3	0.02	6.56	6.59	—	1,435	1,435	0.02	0.20	3.65	1,497
Hauling	0.01	< 0.005	0.21	0.04	< 0.005	< 0.005	8.16	8.16	< 0.005	0.82	0.83	—	198	198	< 0.005	0.03	0.42	207
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.25	0.29	3.41	0.00	0.00	0.57	0.57	0.00	0.13	0.13	—	597	597	0.03	0.02	0.93	606
Vendor	0.01	0.01	0.33	0.12	< 0.005	< 0.005	13.9	13.9	< 0.005	1.40	1.41	—	311	311	< 0.005	0.04	0.34	324
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	1.74	1.74	< 0.005	0.18	0.18	—	42.8	42.8	< 0.005	0.01	0.04	44.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.05	0.62	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	98.9	98.9	< 0.005	< 0.005	0.15	100
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	2.54	2.54	< 0.005	0.26	0.26	—	51.4	51.4	< 0.005	0.01	0.06	53.6
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.32	0.32	< 0.005	0.03	0.03	—	7.08	7.08	< 0.005	< 0.005	0.01	7.42

3.4. Phase 2 (2026) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.52	2.26	15.7	66.3	0.12	0.61	—	0.61	0.58	—	0.58	—	12,616	12,616	0.51	0.10	—	12,659

Dust From Material Movement	—	—	—	—	—	—	1.52	1.52	—	0.16	0.16	—	—	—	—	—	—	—
Onsite truck	0.02	0.01	0.28	0.21	< 0.005	< 0.005	0.52	0.52	< 0.005	0.05	0.05	—	57.7	57.7	< 0.005	0.01	0.06	60.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.54	0.49	3.41	14.3	0.03	0.13	—	0.13	0.13	—	0.13	—	2,731	2,731	0.11	0.02	—	2,740
Dust From Material Movement	—	—	—	—	—	—	0.33	0.33	—	0.04	0.04	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.06	0.05	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	12.6	12.6	< 0.005	< 0.005	0.01	13.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.09	0.62	2.62	< 0.005	0.02	—	0.02	0.02	—	0.02	—	452	452	0.02	< 0.005	—	454
Dust From Material Movement	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	2.08	2.08	< 0.005	< 0.005	< 0.005	2.18
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.49	1.39	1.17	22.0	0.00	0.00	2.62	2.62	0.00	0.61	0.61	—	3,037	3,037	0.12	0.10	9.95	3,081

Vendor	0.06	0.05	1.41	0.57	0.01	0.02	65.2	65.3	0.02	6.56	6.59	—	1,435	1,435	0.02	0.20	3.65	1,497
Hauling	0.01	< 0.005	0.21	0.04	< 0.005	< 0.005	8.16	8.16	< 0.005	0.82	0.83	—	198	198	< 0.005	0.03	0.42	207
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.25	0.29	3.41	0.00	0.00	0.57	0.57	0.00	0.13	0.13	—	597	597	0.03	0.02	0.93	606
Vendor	0.01	0.01	0.33	0.12	< 0.005	< 0.005	13.9	13.9	< 0.005	1.40	1.41	—	311	311	< 0.005	0.04	0.34	324
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	1.74	1.74	< 0.005	0.18	0.18	—	42.8	42.8	< 0.005	0.01	0.04	44.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.05	0.62	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	98.9	98.9	< 0.005	< 0.005	0.15	100
Vendor	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	2.54	2.54	< 0.005	0.26	0.26	—	51.4	51.4	< 0.005	0.01	0.06	53.6
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	0.32	0.32	< 0.005	0.03	0.03	—	7.08	7.08	< 0.005	< 0.005	0.01	7.42

3.5. Phase 3 (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.42	5.36	44.8	64.6	0.11	1.62	—	1.62	1.49	—	1.49	—	10,840	10,840	0.44	0.09	—	10,877
Onsite truck	0.02	0.01	0.28	0.21	< 0.005	< 0.005	1.16	1.16	< 0.005	0.12	0.12	—	57.7	57.7	< 0.005	0.01	0.06	60.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	6.42	5.36	44.8	64.6	0.11	1.62	—	1.62	1.49	—	1.49	—	10,840	10,840	0.44	0.09	—	10,877
Onsite truck	0.02	0.01	0.30	0.22	< 0.005	< 0.005	1.16	1.16	< 0.005	0.12	0.12	—	58.6	58.6	< 0.005	0.01	< 0.005	61.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.62	2.19	18.3	26.4	0.04	0.66	—	0.66	0.61	—	0.61	—	4,429	4,429	0.18	0.04	—	4,445
Onsite truck	0.01	0.01	0.12	0.09	< 0.005	< 0.005	0.47	0.47	< 0.005	0.05	0.05	—	23.7	23.7	< 0.005	< 0.005	0.01	24.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	0.40	3.34	4.82	0.01	0.12	—	0.12	0.11	—	0.11	—	733	733	0.03	0.01	—	736
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.09	0.09	< 0.005	0.01	0.01	—	3.93	3.93	< 0.005	< 0.005	< 0.005	4.12
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	6.44	6.00	5.05	94.8	0.00	0.00	11.3	11.3	0.00	2.65	2.65	—	13,091	13,091	0.53	0.44	42.9	13,278
Vendor	0.06	0.05	1.41	0.57	0.01	0.02	65.2	65.3	0.02	6.56	6.59	—	1,435	1,435	0.02	0.20	3.65	1,497
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	5.16	4.70	5.75	54.2	0.00	0.00	11.3	11.3	0.00	2.65	2.65	—	11,067	11,067	0.57	0.44	1.11	11,214
Vendor	0.06	0.04	1.56	0.58	0.01	0.02	65.2	65.3	0.02	6.56	6.59	—	1,435	1,435	0.02	0.20	0.09	1,495
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	2.25	2.07	2.33	27.8	0.00	0.00	4.60	4.60	0.00	1.08	1.08	—	4,861	4,861	0.23	0.18	7.56	4,928
Vendor	0.02	0.02	0.63	0.24	< 0.005	0.01	26.3	26.3	0.01	2.65	2.66	—	586	586	0.01	0.08	0.64	611
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.41	0.38	0.43	5.07	0.00	0.00	0.84	0.84	0.00	0.20	0.20	—	805	805	0.04	0.03	1.25	816
Vendor	< 0.005	< 0.005	0.11	0.04	< 0.005	< 0.005	4.80	4.80	< 0.005	0.48	0.48	—	97.1	97.1	< 0.005	0.01	0.11	101
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.6. Phase 3 (2026) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.80	2.47	18.2	70.5	0.09	0.59	—	0.59	0.56	—	0.56	—	9,594	9,594	0.39	0.08	—	9,627
Onsite truck	0.02	0.01	0.28	0.21	< 0.005	< 0.005	0.52	0.52	< 0.005	0.05	0.05	—	57.7	57.7	< 0.005	0.01	0.06	60.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.80	2.47	18.2	70.5	0.09	0.59	—	0.59	0.56	—	0.56	—	9,594	9,594	0.39	0.08	—	9,627
Onsite truck	0.02	0.01	0.30	0.22	< 0.005	< 0.005	0.52	0.52	< 0.005	0.05	0.05	—	58.6	58.6	< 0.005	0.01	< 0.005	61.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	1.15	1.01	7.44	28.8	0.04	0.24	—	0.24	0.23	—	0.23	—	3,920	3,920	0.16	0.03	—	3,934
Onsite truck	0.01	0.01	0.12	0.09	< 0.005	< 0.005	0.21	0.21	< 0.005	0.02	0.02	—	23.7	23.7	< 0.005	< 0.005	0.01	24.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.36	5.26	0.01	0.04	—	0.04	0.04	—	0.04	—	649	649	0.03	0.01	—	651
Onsite truck	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	3.93	3.93	< 0.005	< 0.005	< 0.005	4.12
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	6.44	6.00	5.05	94.8	0.00	0.00	11.3	11.3	0.00	2.65	2.65	—	13,091	13,091	0.53	0.44	42.9	13,278
Vendor	0.06	0.05	1.41	0.57	0.01	0.02	65.2	65.3	0.02	6.56	6.59	—	1,435	1,435	0.02	0.20	3.65	1,497
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	5.16	4.70	5.75	54.2	0.00	0.00	11.3	11.3	0.00	2.65	2.65	—	11,067	11,067	0.57	0.44	1.11	11,214
Vendor	0.06	0.04	1.56	0.58	0.01	0.02	65.2	65.3	0.02	6.56	6.59	—	1,435	1,435	0.02	0.20	0.09	1,495
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.25	2.07	2.33	27.8	0.00	0.00	4.60	4.60	0.00	1.08	1.08	—	4,861	4,861	0.23	0.18	7.56	4,928
Vendor	0.02	0.02	0.63	0.24	< 0.005	0.01	26.3	26.3	0.01	2.65	2.66	—	586	586	0.01	0.08	0.64	611
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.41	0.38	0.43	5.07	0.00	0.00	0.84	0.84	0.00	0.20	0.20	—	805	805	0.04	0.03	1.25	816
Vendor	< 0.005	< 0.005	0.11	0.04	< 0.005	< 0.005	4.80	4.80	< 0.005	0.48	0.48	—	97.1	97.1	< 0.005	0.01	0.11	101

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

3.7. Phase 3 (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.07	5.07	42.9	64.6	0.11	1.42	—	1.42	1.31	—	1.31	—	10,840	10,840	0.44	0.09	—	10,878
Onsite truck	0.02	0.01	0.30	0.22	< 0.005	< 0.005	1.16	1.16	< 0.005	0.12	0.12	—	57.4	57.4	< 0.005	0.01	< 0.005	60.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.86	0.71	6.04	9.11	0.02	0.20	—	0.20	0.18	—	0.18	—	1,527	1,527	0.06	0.01	—	1,533
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	8.01	8.01	< 0.005	< 0.005	< 0.005	8.40
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.10	1.66	< 0.005	0.04	—	0.04	0.03	—	0.03	—	253	253	0.01	< 0.005	—	254
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.03	0.03	< 0.005	< 0.005	< 0.005	—	1.33	1.33	< 0.005	< 0.005	< 0.005	1.39
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	4.59	4.14	5.36	48.8	0.00	0.00	11.3	11.3	0.00	2.65	2.65	—	10,879	10,879	0.57	0.44	1.01	11,025
Vendor	0.05	0.04	1.48	0.53	0.01	0.02	65.2	65.3	0.02	6.56	6.59	—	1,406	1,406	0.02	0.20	0.08	1,465
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.74	0.68	0.70	8.64	0.00	0.00	1.59	1.59	0.00	0.37	0.37	—	1,647	1,647	0.07	0.06	2.37	1,669
Vendor	0.01	0.01	0.21	0.07	< 0.005	< 0.005	9.07	9.07	< 0.005	0.91	0.92	—	198	198	< 0.005	0.03	0.19	207
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.13	1.58	0.00	0.00	0.29	0.29	0.00	0.07	0.07	—	273	273	0.01	0.01	0.39	276
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	1.66	1.66	< 0.005	0.17	0.17	—	32.8	32.8	< 0.005	< 0.005	0.03	34.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Phase 3 (2027) - Mitigated

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

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

Off-Road Equipment	2.65	2.35	17.8	70.4	0.09	0.53	—	0.53	0.50	—	0.50	—	9,594	9,594	0.39	0.08	—	9,627
Onsite truck	0.02	0.01	0.30	0.22	< 0.005	< 0.005	0.52	0.52	< 0.005	0.05	0.05	—	57.4	57.4	< 0.005	0.01	< 0.005	60.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.37	0.33	2.51	9.92	0.01	0.07	—	0.07	0.07	—	0.07	—	1,352	1,352	0.05	0.01	—	1,356
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	8.01	8.01	< 0.005	< 0.005	< 0.005	8.40
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.46	1.81	< 0.005	0.01	—	0.01	0.01	—	0.01	—	224	224	0.01	< 0.005	—	225
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	1.33	1.33	< 0.005	< 0.005	< 0.005	1.39
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	4.59	4.14	5.36	48.8	0.00	0.00	11.3	11.3	0.00	2.65	2.65	—	10,879	10,879	0.57	0.44	1.01	11,025
Vendor	0.05	0.04	1.48	0.53	0.01	0.02	65.2	65.3	0.02	6.56	6.59	—	1,406	1,406	0.02	0.20	0.08	1,465
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.74	0.68	0.70	8.64	0.00	0.00	1.59	1.59	0.00	0.37	0.37	—	1,647	1,647	0.07	0.06	2.37	1,669
Vendor	0.01	0.01	0.21	0.07	< 0.005	< 0.005	9.07	9.07	< 0.005	0.91	0.92	—	198	198	< 0.005	0.03	0.19	207

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.12	0.13	1.58	0.00	0.00	0.29	0.29	0.00	0.07	0.07	—	273	273	0.01	0.01	0.39	276
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	1.66	1.66	< 0.005	0.17	0.17	—	32.8	32.8	< 0.005	< 0.005	0.03	34.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Phase 4 (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.14	0.10	< 0.005	< 0.005	0.58	0.58	< 0.005	0.06	0.06	—	28.3	28.3	< 0.005	< 0.005	0.03	29.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.15	0.11	< 0.005	< 0.005	0.58	0.58	< 0.005	0.06	0.06	—	28.7	28.7	< 0.005	< 0.005	< 0.005	30.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.06	0.05	< 0.005	< 0.005	0.24	0.24	< 0.005	0.02	0.02	—	12.2	12.2	< 0.005	< 0.005	< 0.005	12.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.04	0.04	< 0.005	< 0.005	< 0.005	—	2.01	2.01	< 0.005	< 0.005	< 0.005	2.11
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.35	0.33	0.27	4.99	0.00	0.00	0.66	0.66	0.00	0.15	0.15	—	746	746	0.03	0.03	2.26	757

Vendor	0.06	0.05	1.34	0.52	0.01	0.02	65.2	65.3	0.02	6.56	6.59	—	1,405	1,405	0.02	0.20	3.18	1,467
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.24	0.31	2.83	0.00	0.00	0.66	0.66	0.00	0.15	0.15	—	631	631	0.03	0.03	0.06	639
Vendor	0.05	0.04	1.48	0.53	0.01	0.02	65.2	65.3	0.02	6.56	6.59	—	1,406	1,406	0.02	0.20	0.08	1,465
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.12	1.52	0.00	0.00	0.28	0.28	0.00	0.07	0.07	—	290	290	0.01	0.01	0.42	294
Vendor	0.03	0.02	0.62	0.23	< 0.005	0.01	27.5	27.5	0.01	2.77	2.78	—	601	601	0.01	0.08	0.59	627
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.28	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	48.0	48.0	< 0.005	< 0.005	0.07	48.6
Vendor	< 0.005	< 0.005	0.11	0.04	< 0.005	< 0.005	5.02	5.02	< 0.005	0.51	0.51	—	99.5	99.5	< 0.005	0.01	0.10	104
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Phase 4 (2027) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.01	0.01	0.14	0.10	< 0.005	< 0.005	0.26	0.26	< 0.005	0.03	0.03	—	28.3	28.3	< 0.005	< 0.005	0.03	29.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.01	0.01	0.15	0.11	< 0.005	< 0.005	0.26	0.26	< 0.005	0.03	0.03	—	28.7	28.7	< 0.005	< 0.005	< 0.005	30.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.06	0.05	< 0.005	< 0.005	0.11	0.11	< 0.005	0.01	0.01	—	12.2	12.2	< 0.005	< 0.005	< 0.005	12.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	2.01	2.01	< 0.005	< 0.005	< 0.005	2.11
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.35	0.33	0.27	4.99	0.00	0.00	0.66	0.66	0.00	0.15	0.15	—	746	746	0.03	0.03	2.26	757
Vendor	0.06	0.05	1.34	0.52	0.01	0.02	65.2	65.3	0.02	6.56	6.59	—	1,405	1,405	0.02	0.20	3.18	1,467
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.24	0.31	2.83	0.00	0.00	0.66	0.66	0.00	0.15	0.15	—	631	631	0.03	0.03	0.06	639
Vendor	0.05	0.04	1.48	0.53	0.01	0.02	65.2	65.3	0.02	6.56	6.59	—	1,406	1,406	0.02	0.20	0.08	1,465
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.12	1.52	0.00	0.00	0.28	0.28	0.00	0.07	0.07	—	290	290	0.01	0.01	0.42	294
Vendor	0.03	0.02	0.62	0.23	< 0.005	0.01	27.5	27.5	0.01	2.77	2.78	—	601	601	0.01	0.08	0.59	627
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.28	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	48.0	48.0	< 0.005	< 0.005	0.07	48.6
Vendor	< 0.005	< 0.005	0.11	0.04	< 0.005	< 0.005	5.02	5.02	< 0.005	0.51	0.51	—	99.5	99.5	< 0.005	0.01	0.10	104
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Phase 5 (2050) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.41	2.00	16.6	24.6	0.06	0.37	—	0.37	0.34	—	0.34	—	5,278	5,278	0.21	0.04	—	5,296
Onsite truck	0.02	0.02	0.26	0.23	< 0.005	< 0.005	1.16	1.16	< 0.005	0.12	0.12	—	48.2	48.2	< 0.005	0.01	< 0.005	50.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.41	2.00	16.6	24.6	0.06	0.37	—	0.37	0.34	—	0.34	—	5,278	5,278	0.21	0.04	—	5,296
Onsite truck	0.02	0.01	0.28	0.23	< 0.005	< 0.005	1.16	1.16	< 0.005	0.12	0.12	—	49.1	49.1	< 0.005	0.01	< 0.005	51.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.85	1.54	12.7	18.9	0.04	0.28	—	0.28	0.26	—	0.26	—	4,049	4,049	0.16	0.03	—	4,063
Onsite truck	0.01	0.01	0.21	0.18	< 0.005	< 0.005	0.87	0.88	< 0.005	0.09	0.09	—	37.2	37.2	< 0.005	0.01	< 0.005	39.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.28	2.32	3.45	0.01	0.05	—	0.05	0.05	—	0.05	—	670	670	0.03	0.01	—	673

Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.16	0.16	< 0.005	0.02	0.02	—	6.17	6.17	< 0.005	< 0.005	< 0.005	6.46
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.46	1.43	1.08	32.0	0.00	0.00	11.3	11.3	0.00	2.65	2.65	—	10,472	10,472	0.07	0.07	1.56	10,495
Vendor	0.03	0.03	0.85	0.29	0.01	0.02	65.2	65.2	0.01	6.56	6.58	—	919	919	< 0.005	0.13	< 0.005	959
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.30	1.28	1.08	17.9	0.00	0.00	11.3	11.3	0.00	2.65	2.65	—	8,897	8,897	0.07	0.07	0.04	8,918
Vendor	0.03	0.03	0.94	0.31	0.01	0.02	65.2	65.2	0.01	6.56	6.58	—	920	920	< 0.005	0.13	< 0.005	960
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.01	1.00	0.81	17.4	0.00	0.00	8.65	8.65	0.00	2.03	2.03	—	7,321	7,321	0.05	0.05	0.51	7,338
Vendor	0.02	0.02	0.71	0.23	0.01	0.02	49.4	49.4	0.01	4.97	4.98	—	706	706	< 0.005	0.10	< 0.005	736
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.18	0.15	3.18	0.00	0.00	1.58	1.58	0.00	0.37	0.37	—	1,212	1,212	0.01	0.01	0.09	1,215
Vendor	< 0.005	< 0.005	0.13	0.04	< 0.005	< 0.005	9.01	9.01	< 0.005	0.91	0.91	—	117	117	< 0.005	0.02	< 0.005	122
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Phase 5 (2050) - Mitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.41	1.24	11.5	31.3	0.06	0.32	—	0.32	0.30	—	0.30	—	5,278	5,278	0.21	0.04	—	5,296
Onsite truck	0.02	0.02	0.26	0.23	< 0.005	< 0.005	0.52	0.52	< 0.005	0.05	0.05	—	48.2	48.2	< 0.005	0.01	< 0.005	50.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.41	1.24	11.5	31.3	0.06	0.32	—	0.32	0.30	—	0.30	—	5,278	5,278	0.21	0.04	—	5,296
Onsite truck	0.02	0.01	0.28	0.23	< 0.005	< 0.005	0.52	0.52	< 0.005	0.05	0.05	—	49.1	49.1	< 0.005	0.01	< 0.005	51.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.08	0.95	8.82	24.0	0.04	0.25	—	0.25	0.23	—	0.23	—	4,049	4,049	0.16	0.03	—	4,063
Onsite truck	0.01	0.01	0.21	0.18	< 0.005	< 0.005	0.39	0.39	< 0.005	0.04	0.04	—	37.2	37.2	< 0.005	0.01	< 0.005	39.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.61	4.38	0.01	0.04	—	0.04	0.04	—	0.04	—	670	670	0.03	0.01	—	673
Onsite truck	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	6.17	6.17	< 0.005	< 0.005	< 0.005	6.46
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	1.46	1.43	1.08	32.0	0.00	0.00	11.3	11.3	0.00	2.65	2.65	—	10,472	10,472	0.07	0.07	1.56	10,495
Vendor	0.03	0.03	0.85	0.29	0.01	0.02	65.2	65.2	0.01	6.56	6.58	—	919	919	< 0.005	0.13	< 0.005	959
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.30	1.28	1.08	17.9	0.00	0.00	11.3	11.3	0.00	2.65	2.65	—	8,897	8,897	0.07	0.07	0.04	8,918
Vendor	0.03	0.03	0.94	0.31	0.01	0.02	65.2	65.2	0.01	6.56	6.58	—	920	920	< 0.005	0.13	< 0.005	960
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.01	1.00	0.81	17.4	0.00	0.00	8.65	8.65	0.00	2.03	2.03	—	7,321	7,321	0.05	0.05	0.51	7,338
Vendor	0.02	0.02	0.71	0.23	0.01	0.02	49.4	49.4	0.01	4.97	4.98	—	706	706	< 0.005	0.10	< 0.005	736
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.18	0.15	3.18	0.00	0.00	1.58	1.58	0.00	0.37	0.37	—	1,212	1,212	0.01	0.01	0.09	1,215
Vendor	< 0.005	< 0.005	0.13	0.04	< 0.005	< 0.005	9.01	9.01	< 0.005	0.91	0.91	—	117	117	< 0.005	0.02	< 0.005	122
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Phase 1	Site Preparation	04/08/2026	07/08/2026	6.00	79.0	Site Preparation, Fencing, and Ingress/Egress
Phase 2	Grading	04/08/2026	7/8/2026	6.00	79.0	Civil Improvements - Grading/Roads/Earthwork
Phase 3	Building Construction	07/11/2026	03/01/2027	6.00	200	PV Panel & BESS Construction
Phase 4	Building Construction	04/05/2027	10/2/2027	6.00	156	Testing & Commissioning

Phase 5	Building Construction	01/01/2050	11/23/2050	6.00	280	Decommissioning

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Phase 1	Graders	Diesel	Average	4.00	6.00	148	0.41
Phase 1	Scrapers	Diesel	Average	4.00	4.00	84.0	0.37
Phase 1	Crawler Tractors	Diesel	Average	4.00	5.00	87.0	0.43
Phase 1	Plate Compactors	Diesel	Average	4.00	4.00	8.00	0.43
Phase 1	Off-Highway Trucks	Diesel	Average	4.00	7.00	376	0.38
Phase 1	Rubber Tired Loaders	Diesel	Average	4.00	8.00	150	0.36
Phase 2	Graders	Diesel	Average	4.00	6.00	148	0.41
Phase 2	Rubber Tired Loaders	Diesel	Average	1.00	7.00	150	0.36
Phase 2	Plate Compactors	Diesel	Average	4.00	4.00	84.0	0.37
Phase 2	Scrapers	Diesel	Average	4.00	4.00	423	0.48
Phase 2	Crawler Tractors	Diesel	Average	4.00	8.00	87.0	0.43
Phase 2	Off-Highway Trucks	Diesel	Average	4.00	7.00	376	0.38
Phase 3	Air Compressors	Diesel	Average	4.00	8.00	84.0	0.37
Phase 3	Crawler Tractors	Diesel	Average	4.00	4.00	367	0.29
Phase 3	Generator Sets	Diesel	Average	8.00	8.00	82.0	0.20
Phase 3	Other Construction Equipment	Diesel	Average	4.00	2.00	82.0	0.42
Phase 3	Rough Terrain Forklifts	Diesel	Average	8.00	5.00	96.0	0.40
Phase 3	Rubber Tired Loaders	Diesel	Average	8.00	5.00	150	0.36
Phase 3	Trenchers	Diesel	Average	8.00	5.00	40.0	0.50
Phase 3	Other Construction Equipment	Diesel	Average	4.00	4.00	82.0	0.42
Phase 5	Crawler Tractors	Diesel	Average	4.00	4.00	367	0.29

Phase 5	Generator Sets	Diesel	Average	8.00	8.00	14.0	0.74
Phase 5	Other Construction Equipment	Diesel	Average	4.00	2.00	82.0	0.42
Phase 5	Air Compressors	Diesel	Average	4.00	8.00	37.0	0.48
Phase 5	Rough Terrain Forklifts	Diesel	Average	8.00	4.00	96.0	0.40

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Phase 1	Graders	Diesel	Tier 4 Final	4.00	6.00	148	0.41
Phase 1	Scrapers	Diesel	Tier 4 Final	4.00	4.00	84.0	0.37
Phase 1	Crawler Tractors	Diesel	Tier 4 Final	4.00	5.00	87.0	0.43
Phase 1	Plate Compactors	Diesel	Average	4.00	4.00	8.00	0.43
Phase 1	Off-Highway Trucks	Diesel	Tier 4 Final	4.00	7.00	376	0.38
Phase 1	Rubber Tired Loaders	Diesel	Tier 4 Final	4.00	8.00	150	0.36
Phase 2	Graders	Diesel	Tier 4 Final	4.00	6.00	148	0.41
Phase 2	Rubber Tired Loaders	Diesel	Tier 4 Final	1.00	7.00	150	0.36
Phase 2	Plate Compactors	Diesel	Average	4.00	4.00	84.0	0.37
Phase 2	Scrapers	Diesel	Average	2.00	4.00	423	0.48
Phase 2	Scrapers	Diesel	Tier 4 Final	2.00	4.00	423	0.48
Phase 2	Crawler Tractors	Diesel	Tier 4 Final	4.00	8.00	87.0	0.43
Phase 2	Off-Highway Trucks	Diesel	Tier 4 Final	4.00	7.00	376	0.38
Phase 3	Air Compressors	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Phase 3	Crawler Tractors	Diesel	Tier 4 Final	4.00	4.00	367	0.29
Phase 3	Generator Sets	Diesel	Average	8.00	8.00	82.0	0.20
Phase 3	Other Construction Equipment	Diesel	Tier 4 Final	4.00	2.00	82.0	0.42
Phase 3	Rough Terrain Forklifts	Diesel	Tier 4 Final	8.00	5.00	96.0	0.40
Phase 3	Rubber Tired Loaders	Diesel	Tier 4 Final	8.00	5.00	150	0.36
Phase 3	Trenchers	Diesel	Average	8.00	5.00	40.0	0.50

Phase 3	Other Construction Equipment	Diesel	Tier 4 Final	4.00	4.00	82.0	0.42
Phase 5	Crawler Tractors	Diesel	Tier 4 Final	4.00	4.00	367	0.29
Phase 5	Generator Sets	Diesel	Average	8.00	8.00	14.0	0.74
Phase 5	Other Construction Equipment	Diesel	Tier 4 Final	4.00	2.00	82.0	0.42
Phase 5	Air Compressors	Diesel	Tier 4 Final	4.00	8.00	37.0	0.48
Phase 5	Rough Terrain Forklifts	Diesel	Tier 4 Final	8.00	4.00	96.0	0.40

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Phase 3	—	—	—	—
Phase 3	Worker	1,000	16.0	LDA,LDT1,LDT2
Phase 3	Vendor	32.0	15.0	HHDT,MHDT
Phase 3	Hauling	0.00	0.00	HHDT
Phase 3	Onsite truck	16.0	0.50	HHDT
Phase 1	—	—	—	—
Phase 1	Worker	148	16.0	LDA,LDT1,LDT2
Phase 1	Vendor	32.0	15.0	HHDT,MHDT
Phase 1	Hauling	0.00	0.00	HHDT
Phase 1	Onsite truck	20.0	0.50	HHDT
Phase 2	—	—	—	—
Phase 2	Worker	232	16.0	LDA,LDT1,LDT2
Phase 2	Vendor	32.0	15.0	HHDT,MHDT
Phase 2	Hauling	2.00	30.0	HHDT
Phase 2	Onsite truck	16.0	0.50	HHDT
Phase 4	—	—	—	—

Phase 4	Worker	58.0	16.0	LDA,LDT1,LDT2
Phase 4	Vendor	32.0	15.0	HHDT,MHDT
Phase 4	Hauling	0.00	0.00	HHDT
Phase 4	Onsite truck	8.00	0.50	HHDT
Phase 5	—	—	—	—
Phase 5	Worker	1,000	16.0	LDA,LDT1,LDT2
Phase 5	Vendor	32.0	15.0	HHDT,MHDT
Phase 5	Hauling	0.00	0.00	HHDT
Phase 5	Onsite truck	16.0	0.50	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Phase 3	—	—	—	—
Phase 3	Worker	1,000	16.0	LDA,LDT1,LDT2
Phase 3	Vendor	32.0	15.0	HHDT,MHDT
Phase 3	Hauling	0.00	0.00	HHDT
Phase 3	Onsite truck	16.0	0.50	HHDT
Phase 1	—	—	—	—
Phase 1	Worker	148	16.0	LDA,LDT1,LDT2
Phase 1	Vendor	32.0	15.0	HHDT,MHDT
Phase 1	Hauling	0.00	0.00	HHDT
Phase 1	Onsite truck	20.0	0.50	HHDT
Phase 2	—	—	—	—
Phase 2	Worker	232	16.0	LDA,LDT1,LDT2
Phase 2	Vendor	32.0	15.0	HHDT,MHDT
Phase 2	Hauling	2.00	30.0	HHDT
Phase 2	Onsite truck	16.0	0.50	HHDT
Phase 4	—	—	—	—

Phase 4	Worker	58.0	16.0	LDA,LDT1,LDT2
Phase 4	Vendor	32.0	15.0	HHDT,MHDT
Phase 4	Hauling	0.00	0.00	HHDT
Phase 4	Onsite truck	8.00	0.50	HHDT
Phase 5	—	—	—	—
Phase 5	Worker	1,000	16.0	LDA,LDT1,LDT2
Phase 5	Vendor	32.0	15.0	HHDT,MHDT
Phase 5	Hauling	0.00	0.00	HHDT
Phase 5	Onsite truck	16.0	0.50	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Apply dust suppressants to unpaved roads	84%	84%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Phase 1	0.00	0.00	375	0.00	—
Phase 2	0.00	0.00	435	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
General Office Building	0.00	0%
Parking Lot	0.80	100%
Other Non-Asphalt Surfaces	1,848	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	457	0.03	< 0.005
2027	0.00	457	0.03	< 0.005
2050	0.00	457	0.03	< 0.005

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Used applicant provided construction schedule
Construction: Off-Road Equipment	Used information provided by the applicant.
Construction: Trips and VMT	Information provided by applicant.
Construction: Architectural Coatings	Used specs
Operations: Energy Use	Information from applicant
Operations: Water and Waste Water	Information from applicant.
Land Use	Information provided by applicant.

Construction: Dust From Material Movement	Applicant to water area 3 times a day.
Construction: On-Road Fugitive Dust	Applied project design feature to apply dust suppressants and limit vehicle speeds on unpaved roads to 15 mph.