APPENDIX D – AIR QUALITY

Air Quality Analysis for the Westside Canal Battery Storage Project

Air Quality Analysis for the Westside Canal Battery Storage Project
Imperial County, California

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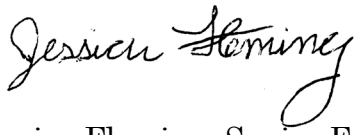

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ATTACHMENTS

Acronyms

°F	degrees Fahrenheit
AB	Assembly Bill
APCD	Air Pollution Control District
APN	Assessor Parcel Number
BLM	Bureau of Land Management
BTM	behind-the-meter
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAISO	California Independent System Operator
Caltrans	California Department of Transportation
CalEEMod	California Emissions Estimator Model
CARB	California Air Resources Board
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CO	carbon monoxide
DPM	diesel-exhaust particulate matter
I-8	Interstate 8
IID	Imperial Irrigation District
ITE	Institute of Transportation Engineers
LOS	Level of Service
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
O&M	operations and maintenance
ODCP	Operational Dust Control Plan
Pb	lead
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter
Project	Westside Canal Battery Storage Project
PV	photovoltaic
ROG	reactive organic gases
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SO_2	sulfur dioxide
TAC	toxic air contaminant
U.S. EPA	United States Environmental Protection Agency
USC	United States Code
VOC	volatile organic compounds

Executive Summary

This report provides the results of the air quality emissions analysis performed for the proposed Westside Canal Battery Storage Project (Project) in Imperial County, California. The Project site consists of approximately 148 acres of agriculturally-zoned land located in the unincorporated Mount Signal area of the County, approximately 8.0 miles southwest of the city of El Centro (Assessor Parcel Numbers [APNs] 051-350-010 and 051-350-011). The Project site is located approximately one-third mile north of the Imperial Valley Substation (IV Substation) and directly south of the intersection of Liebert Road and the Imperial Irrigation District's (IID) Westside Main Canal. The Project site is bounded by the Westside Main Canal to the north, Bureau of Land Management (BLM) lands to the south and west, and vacant private land to the east. The Campo Verde solar generation facility is located north of the Project site, across the Westside Main Canal.

The two Project parcels are proposed for development as a utility-scale energy storage complex. The Project would also utilize portions of two parcels located north of the Westside Main Canal (APN 051-350-019 owned by IID and APN 051-350-018 owned by a private landowner) for site access and as a temporary construction staging area. The Project would also access a small portion of APN 051-350-009 within an IID easement for connection to the existing IID Campo Verde – Imperial Valley 230 kilovolt radial gen-tie line during the construction of a switching station on the Project site.

This analysis evaluates the significance of the Project in accordance with the California Environmental Quality Act (CEQA) and guidance from the Imperial County Air Pollution Control District (APCD). The Project was evaluated to determine if it would (1) conflict with applicable air quality plans, (2) result in cumulative impacts to air quality, (3) impact sensitive receptors, or (4) expose a substantial number of people to objectionable odors. Project emissions were calculated using the California Emissions Estimator Model Version 2016.3.2.

A significant air quality impact would occur if the Project conflicted with the Imperial County APCD's ozone and particulate matter air quality plans. Project air pollutant emissions would be consistent with regional growth projections and the air quality plan emission forecasts, and impacts would be less than significant.

A significant air quality impact would occur if the Project resulted in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment. Construction- and operation-related emissions would be less than all applicable significance thresholds provided mitigation measures MM-AIR-1, MM-AIR-2, and MM-AIR-3 are implemented. The Project site is in a non-attainment area for ozone, particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}), and particulate matter with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$) emissions. Project ozone precursor, PM_{10}, and $PM_{2.5}$ emissions would be less than applicable significance thresholds. Thus, the Project would not result in a cumulatively considerable net increase of ozone precursors or particulate matter emissions, and impacts would be less than significant.

A significant air quality impact would occur if the Project exposed sensitive receptors to substantial pollutant concentrations including air toxics. There are no sensitive receptors in the immediate vicinity of the Project site. The closest sensitive receptor is a single-family residence located approximately 4,000 feet northeast of the Project site at the intersection of Wixom Road and Vogel Road. The Project would result in the generation of diesel-exhaust particulate matter (DPM) during construction and mobile-source carbon monoxide (CO) during operation. Due to the limited duration of construction and the distance to the nearest sensitive receptor, DPM generated by Project construction activities is not expected to create conditions where the incremental cancer risk exceeds the Imperial County APCD's ten in one million significance threshold; thus impacts from DPM exposure would be less than significant. Due to the limited traffic generated by the Project, the Project would not substantially contribute to elevated CO concentrations; impacts from mobile-source CO emissions would be less than significant. The components of solar generation facilities, including the proposed storage and transmission components, have been shown to emit insignificant air toxic emissions, and localized air quality impacts from Project operations would be less than significant.

Project construction would result in temporary odors associated with diesel exhaust. Odors generated from construction would be temporary and intermittent, and would largely dissipate at short distances from the source. Solar generation facilities, including the proposed storage and transmission components, are not known to emit odors during operation. Thus, the Project would not create objectionable odors adversely affecting a substantial number of people, and impacts would be less than significant.

The Project would have a less than significant impact on air quality. Mitigation measures MM-AIR-1, MM-AIR-2, and MM-AIR-3 would be required along with the standard Imperial County APCD dust and equipment measures discussed in this analysis is required.

1.0 Introduction

1.1 Purpose of the Report

This report evaluates the significance of air quality emissions associated with the Westside Canal Battery Storage Project (Project). This report characterizes existing conditions at the Project site and in the region, identifies applicable rules and regulations, and assesses impacts related to air quality associated with construction and operation of the Project.

1.2 Project Description

Westside Canal Battery Storage, LLC (Project Proponent), a subsidiary of Con Edison Clean Energy Businesses, is proposing to develop, design, construct, own, operate, and maintain the Westside Canal Battery Storage Project (Project), a utility-scale energy storage complex with a capacity of up to 2,000 megawatts (MW). The Project would store energy generation from the electrical grid, and optimally discharge that energy back into the grid as firm, reliable generation and/or grid services.

The Project would be comprised of lithium-ion battery and/or flow battery energy storage facilities, a behind-the-meter solar energy facility, a new on-site 230 kilovolt (kV) loop-in switching station, a 34.5 kV to 230 kV substation, underground electrical cables, and permanent vehicular access to and from the site over a proposed bridge spanning Imperial Irrigation District's (IID's) Westside Main Canal. The proposed loop-in switching station would connect the Project to the existing IID Campo Verde – Imperial Valley 230 kV radial gen-tie line, which connects to the Imperial Valley Substation (IV Substation) and the California Independent System Operator (CAISO), approximately one-third mile south of the Project site. The Project Proponent has submitted the necessary Interconnection Request Applications to the CAISO and IID.

The Project would complement both the existing operational renewable energy facilities, as well as those planned for future development in Imperial County (County), and would support the broader southern California bulk electric transmission system by serving as a firm, dispatchable resource.

The Project is pursuing the following objectives:

- To receive grid energy during beneficial market and operational periods and store that energy for dispatch when the customer (i.e., a load-serving entity) deems it to be more valuable.
- To be a valuable resource in allowing the customer and system operators to manage the effect of intermittent renewable generation on the grid and create reliable, dispatchable generation upon demand.
- To utilize available land that has not been used for agricultural production for more than 15 years, and enhance the site location by providing for permanent vehicular access.

1.2.1 Project Location

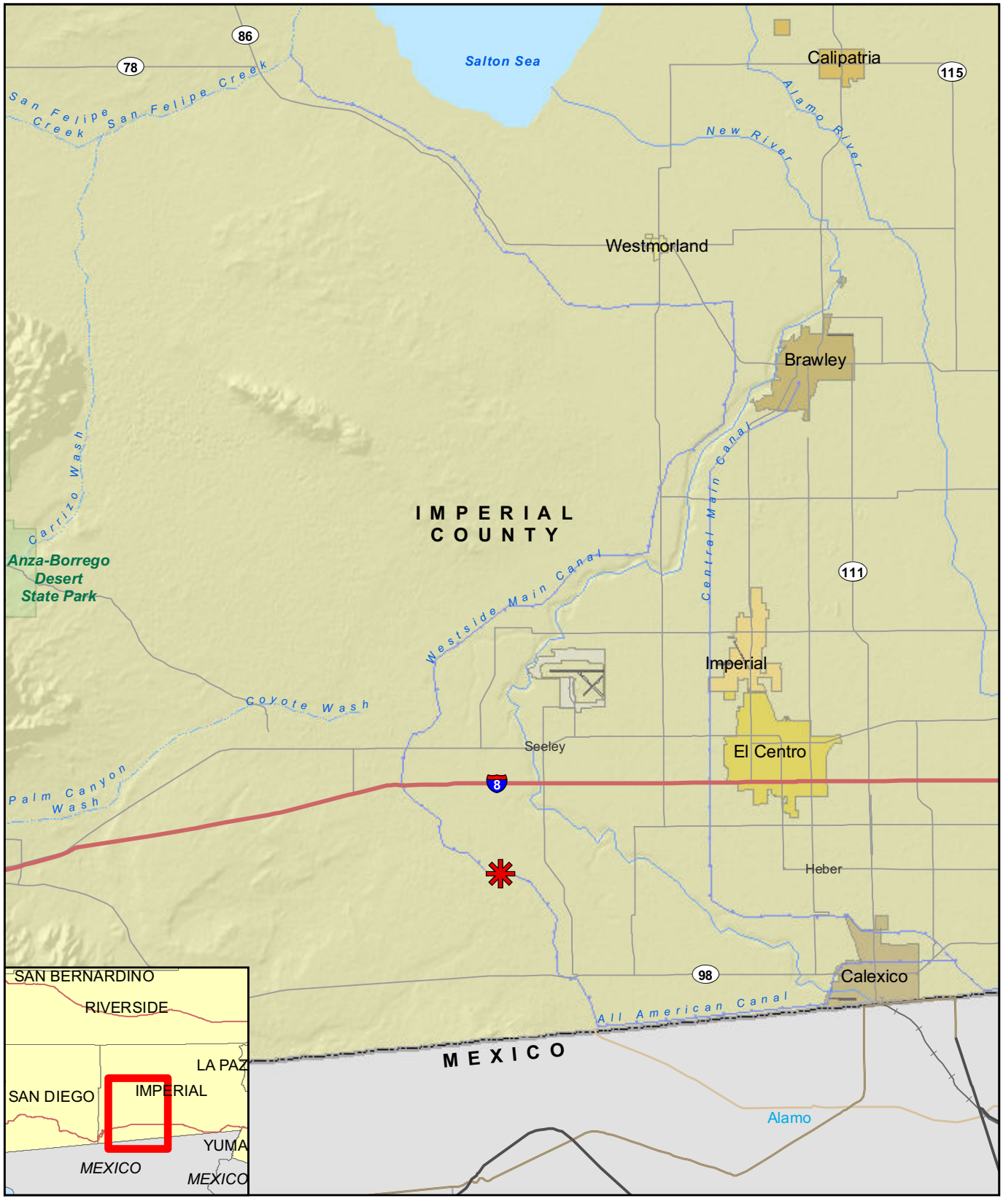
The Project would be located in the unincorporated Mount Signal area of the County, approximately 8.0 miles southwest of the city of El Centro and approximately 5.3 miles north of the U.S.-Mexico border. Figure 1 shows the regional location of the Project. The Project site is comprised of two parcels owned by the Project Proponent, Assessor Parcel Number (APN) 051-350-010 and APN 051-350-011, totaling approximately 148 acres. These parcels have limited access corridors for vehicular traffic and are considered less desirable for agricultural production, as reflected by the last 15 years during which no farming activity has occurred.

The Project site is approximately one-third mile north of the IV Substation and directly south of the intersection of Liebert Road and the IID's Westside Main Canal. The Project site is bounded by the Westside Main Canal to the north, Bureau of Land Management (BLM) lands to the south and west, and vacant private land to the east. The Campo Verde solar generation facility is located north of the Project site, across the Westside Main Canal. Figure 2 shows an aerial photograph of the Project site and the above-mentioned nearby facilities.

The two Project parcels are proposed for development as a utility-scale energy storage complex. The Project would also utilize portions of two parcels located north of the Westside Main Canal (APN 051-350-019 owned by IID and APN 051-350-018 owned by a private landowner) for site access and as a temporary construction staging area. The Project would also access a small portion of APN 051-350-009 within an IID easement for connection to the existing IID Campo Verde – Imperial Valley 230 kV radial gen-tie line during the construction of a substation on the Project site. The total proposed Project development footprint, encompassing both temporary and permanent impacts, would be approximately 163 acres.

1.2.2 Project Components

Figure 3a shows the conceptual site plan for the Project with a representation of the various energy storage technologies, behind-the-meter ground- and roof-mounted solar, common facilities within the Project site, and permanent vehicular access to the Project site. The actual configuration of the Project would depend on the size of individual phases and the type of battery technology deployed. Specific Project components are described below.



Project Location

FIGURE 1
Regional Location

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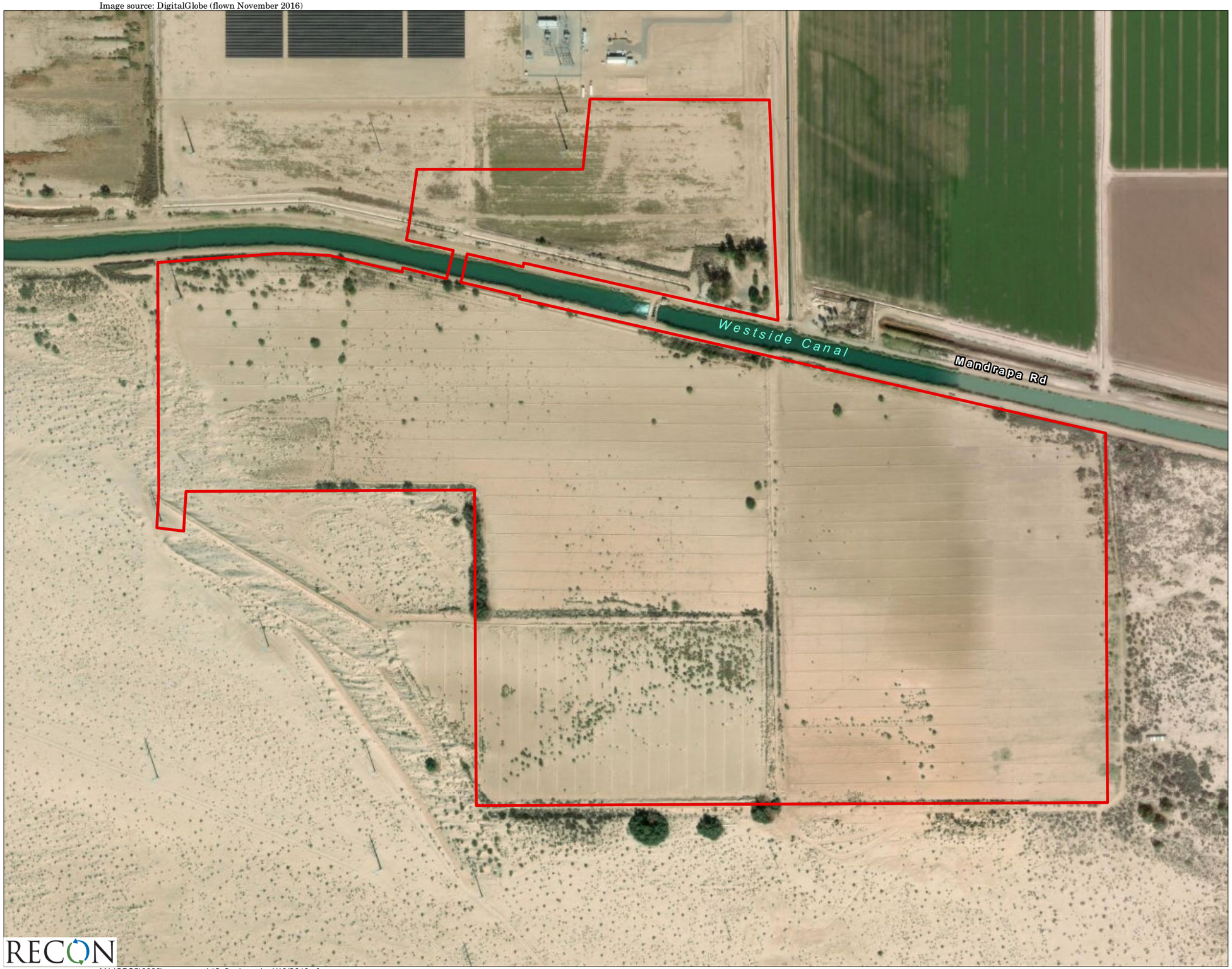
Image source: DigitalGlobe (flown November 2016)



Project Boundary

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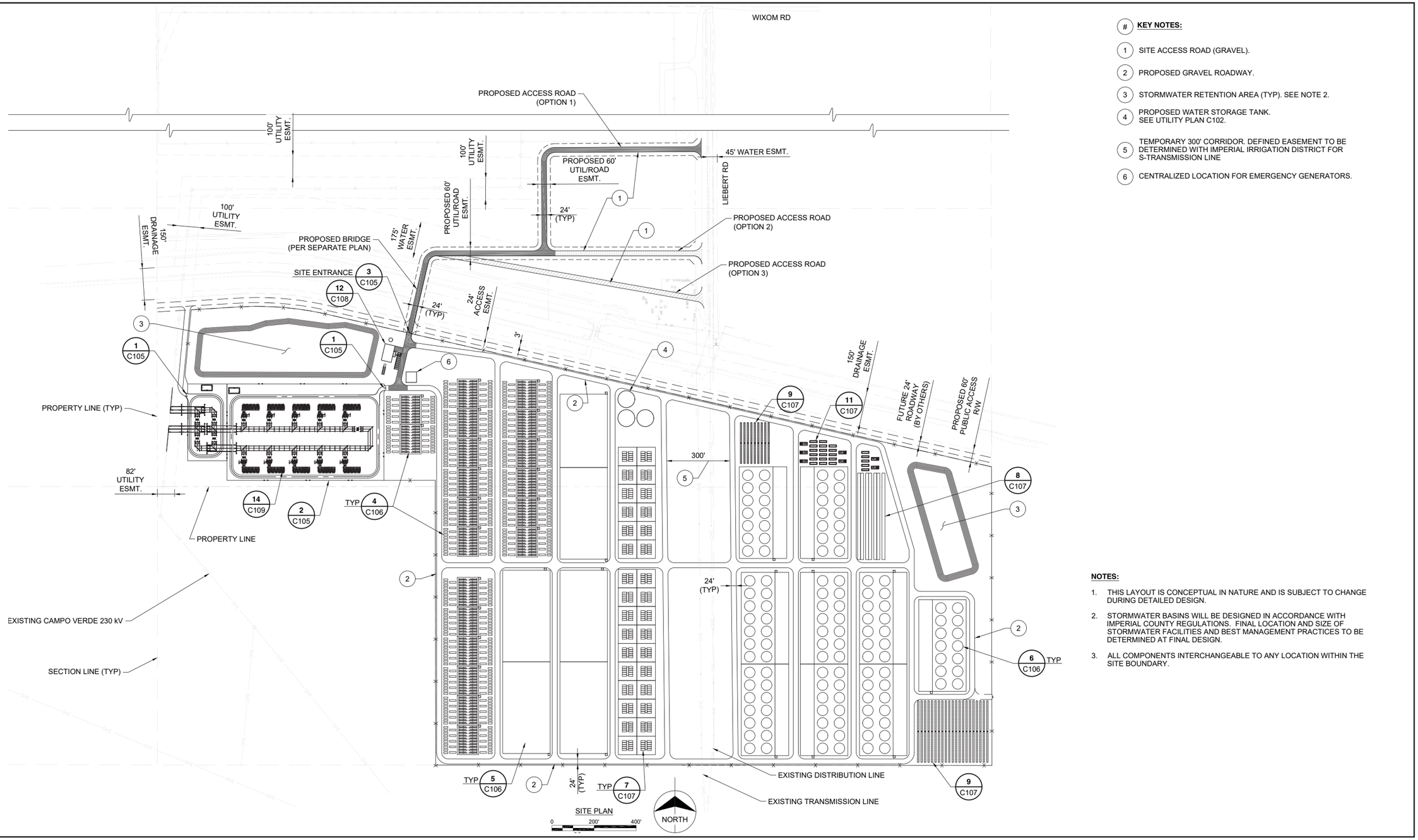
FIGURE 2
Project Location on
Aerial Photograph

Map Source: Burns McDonnell



KEY NOTES:

1. SITE ACCESS ROAD (GRAVEL).
2. PROPOSED GRAVEL ROADWAY.
3. STORMWATER RETENTION AREA (TYP). SEE NOTE 2.
4. PROPOSED WATER STORAGE TANK. SEE UTILITY PLAN C102.
5. TEMPORARY 300' CORRIDOR. DEFINED EASEMENT TO BE DETERMINED WITH IMPERIAL IRRIGATION DISTRICT FOR S-TRANSMISSION LINE
6. CENTRALIZED LOCATION FOR EMERGENCY GENERATORS.

NOTES:

1. THIS LAYOUT IS CONCEPTUAL IN NATURE AND IS SUBJECT TO CHANGE DURING DETAILED DESIGN.
2. STORMWATER BASINS WILL BE DESIGNED IN ACCORDANCE WITH IMPERIAL COUNTY REGULATIONS. FINAL LOCATION AND SIZE OF STORMWATER FACILITIES AND BEST MANAGEMENT PRACTICES TO BE DETERMINED AT FINAL DESIGN.
3. ALL COMPONENTS INTERCHANGEABLE TO ANY LOCATION WITHIN THE SITE BOUNDARY.

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FIGURE 3a
Site Plan

1.2.2.1 Phasing and Schedule

The Project would be constructed in three to five phases over a 10-year period, with each phase ranging from approximately 25 MW up to 400 MW per phase. Depending on the size of the battery system for a given phase, construction and commissioning (approval to operate) is anticipated to take approximately 6 to 12 months. For the purposes of this analysis, the applicant has assumed that construction activities would last for approximately 32 months to complete the full Project build-out.

Construction of the 100- to 200-MW first phase would include roads, a permanent clear-span bridge across the Westside Main Canal, the Operations and Maintenance (O&M) facilities, water connections and water-mains, storm water retention, switching station and Project substation, legal permanent vehicle access, as well as the first energy storage facility. To access the Project site, construction workers would travel along Interstate 8 (I-8) and head 4.6 miles south to the Project site, and would utilize the IID Fern Check Bridge as a temporary pedestrian bridge until the permanent bridge is constructed. During peak construction activities, approximately 200 workers and approximately 30 daily deliveries would be required. It is anticipated that construction of the first phase would begin in 2021.

It is anticipated that each subsequent phase would be constructed within one to two years of each other, with the timing and size of each phase dependent on market conditions and the applicant's ability to secure commercial contracts with prospective customers. With the Project being built in phases, the necessary infrastructure, such as water mains, retention ponds, and access roads, would be built out to serve the Project phases from west to east and expanded over time to serve each phase. These subsequent phases would require improvements such as additional substation equipment, water main and site road extension, but would not require construction of additional common facilities which would be completed during the first phase. The total nameplate (or rated capacity) capacity of the Project at full build-out (all phases completed) would be approximately 2,000 MW.

Construction activities during all Project phases would only occur Monday through Friday, between the hours of 7:00 a.m. and 7:00 p.m. or Saturday between the hours of 9:00 a.m. and 5:00 p.m., excluding holidays, per County Ordinance.

1.2.2.2 Common Components

As shown on the site plan (see Figure 3a), the northwest area of the Project serves as the location for the common facilities, which include the switching station and Project substation and the O&M facilities. A summary of the common facilities is presented below:

- 230 kV loop-in switching station
  - Connection to Campo Verde – Imperial Valley 230 kV radial transmission line
  - Located on applicant property
- Project substation
- O&M facilities
- Project parking

- Storm water retention basins
- Fencing and gates
- Interior access roads

Industrial buildings, warehouses, engineered containers, and/or electrolyte storage tanks would be the primary structures needed to house the main Project components. Other components to be located on the Project site and adjacent to the proposed buildings, warehouses, containers, and tanks include the following:

- Inverters, transformers, power distribution panels
- Underground water-main loop for Project operation and fire prevention
- Underground cable to connect to Project substation
- Project site access roads (unpaved/crushed rock)
- Fire water storage tanks
- Above ground water storage tanks
- Heating, Ventilation, and Air Conditioning (HVAC) units
- Ground-mounted or roof-mounted photovoltaic (PV) arrays
- Emergency backup generator(s)

a. O&M Facilities

The O&M facilities are expected to be the only manned facility on the site. It would include up to approximately 20 full-time employees depending upon the number of phases and type of energy storage facility constructed. O&M employees would work typical weekday hours but may work extended hours, including weekends and 24 hours a day, depending upon the operations and maintenance needs. No offices or staffed control centers would be located within the storage-specific warehouses/buildings. For sanitary waste, the Project would include a septic leach field to be located near the O&M facilities. The proposed O&M facilities would also require an HVAC unit.

b. Permanent Vehicle Access

There are no circulation element roadways in the immediate vicinity of the Project site. The nearest freeways are I-8, located 4.6 miles north of the Project site, and State Route 98 (SR-98), located 5.2 miles south of the Project site. Drew Road, a two-lane collector, is located 1.3 miles east of the Project site. All other roadways in the immediate vicinity of the Project site are rural roadways. All roadways that would be used to access the Project site from I-8 are currently paved, except for the portion of Liebert Road south of Wixom Road. However, this segment would be paved or graveled prior to Project operation.

The Project is surrounded by private landowners to the east, BLM land to the south and west, and IID maintenance roads and Westside Main Canal to the north. Due to the Project site having no direct vehicular access routes, the applicant is proposing to construct roads on both the north and south sides of the Westside Main Canal on private land, and a new clear-span Imperial County-specified bridge over the Westside Main Canal.

The permanent new clear-span County-specified bridge would span the Westside Main Canal to connect to a proposed access road easement on the north side of the Westside Main Canal. The north side proposed access road would ultimately connect the Project to county road (CR) Liebert Road.

Construction of the permanent clear-span bridge spanning the IID's Westside Main Canal requires the Project Proponent to have access to both the north side and the south of the Canal to perform the necessary construction activities. In addition to being necessary to facilitate construction of the new permanent clear-span bridge, access from the south side of the Canal would allow the Project Proponent to commence construction on the first phase of the Project simultaneously, thereby shortening the duration of construction and potentially minimizing the associated impacts. The Project Proponent is evaluating various options for temporary construction access, including accessing the Project site from the south side of the Westside Main Canal off SR-98, as well as options involving access from the north side of the Westside Main Canal from I-8.

Option 1 would use the existing SDG&E maintenance road off Highway 98, which extends approximately 4.4 miles to the IV Substation. Option 1 would then continue along an existing 1.2-mile-long dirt access road that leads north, then east, outside the western and northern boundaries of the substation. Option 1 then continues northwest along an existing dirt access road that parallels two power lines until the access road connects with the western edge of the Project. The existing dirt road was constructed for the construction and maintenance of the existing Campo Verde – Imperial Valley gen-tie line. Option 2 would use the existing IID Westside Main Canal access road. The selected temporary access option would be used until construction of the permanent bridge is completed. Both temporary construction access routes are presented in Figure 3b.

1.2.2.3 Battery Storage Components

The first phase of site construction would consist of either a lithium-ion battery storage facility or a flow battery storage facility. This first phase would be dependent on the first commercial contract awarded to the applicant by a customer. Large industrial buildings, warehouses, and/or containers to house the storage equipment, including battery cells, modules, racks, and controls for lithium-ion technologies, would be needed. For flow battery technologies, cell stack modules, pumps, and controls may be installed inside industrial buildings or pre-engineered outdoor enclosures. Electrolyte storage tanks and associated piping may be located indoors or outdoors, depending on the technology.

Map Source: conEdison Development

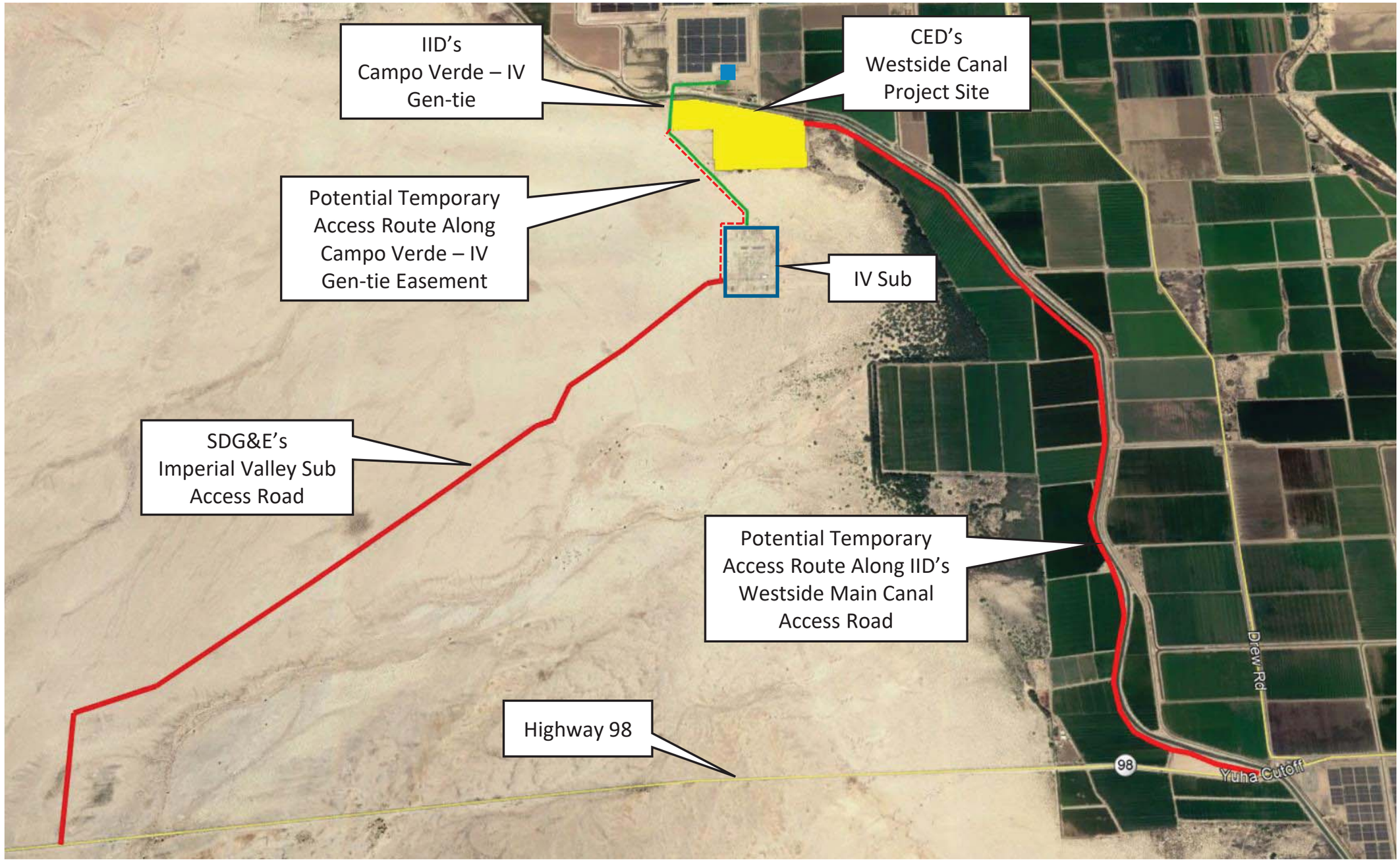

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FIGURE 3b
Temporary Construction Access Routes

a. Battery Modules Technology

Energy Storage

Energy storage is the capture of energy produced at one time for use at a later time. A device that stores energy is generally called an accumulator or battery. Energy storage involves converting energy from forms that are difficult to store to more conveniently or economically storable forms. For the purpose of grid connected energy storage, electrical energy will be stored in the form of chemical energy in lithium-ion and/or flow batteries. Energy storage technology may be centralized or may be distributed throughout the plant. Due to requirements for energy storage, the Project components such as the switching station, substation, transformers, and inverters would be energized at all times with the potential to charge or discharge.

Lithium-Ion Battery

A lithium-ion battery is a type of rechargeable battery in which lithium ions move from the negative electrode through an electrolyte to the positive electrode during discharge, and back when charging. Lithium-ion batteries use an intercalated lithium compound as the material at the positive electrode and typically graphite at the negative electrode. The batteries have a high energy density, no memory effect and low self-discharge.

Flow Battery

A flow battery is a rechargeable fuel cell in which an electrolyte containing one or more dissolved electroactive elements flows through an electrochemical cell that reversibly converts chemical energy directly to electricity. Additional electrolyte is stored externally, generally in tanks, and is usually pumped through the cell (or cells) of the reactor, although gravity feed systems are also known to be used. Flow batteries can be rapidly "recharged" by replacing the electrolyte liquid while simultaneously recovering the spent material for re-energization. Many flow batteries use carbon felt electrodes due to its low cost and adequate electrical conductivity.

b. Backup Generators

The Project would include emergency backup generator(s) to supply auxiliary power to the facility during rare events in which the entire facility or portions of the facility are disconnected from the electrical grid. The Project would use a hybrid approach to emergency backup power supply. Rather than relying exclusively on backup generators, the hybrid approach involves dedicating a portion of the battery storage system capacity as a source of emergency backup power. The reserved battery storage capacity would be approximately 3 to 4 percent of the size of the constructed battery storage system. This hybrid approach would also rely on the use of on-site, behind-the-meter (BTM) solar power generation to supplement the facility's backup power supply needs. Additionally, propane-fueled generators would augment the backup battery storage capacity and the BTM solar power generation.

The generators would be sized to accommodate control systems and HVAC system loads for equipment protection. Approximately 1.25 MW of backup power generation would be needed for every 100 MW of installed battery storage capacity. Each propane-fueled generator would have a capacity of 150 kilowatts or larger. The purpose of the generators would be to provide system safety for events in which the transmission interconnection and the on-site solar generation system are not available, by supplying the battery HVAC system to maintain battery safety and warranty temperature parameters.

The propane-fueled generators would be installed in a central location near the common facilities or distributed among individual buildings or containers. The generators would be periodically tested (monthly) to maintain backup capability in the event of a grid outage. All generators would be subject to Imperial County (APCD review and permitting requirements.

1.2.2.4 Solar Facility Components

Photovoltaic solar cells, also called PV cells, convert sunlight directly into electricity. PV gets its name from the process of converting light (photons) to electricity (voltage), which is called the PV effect. The panels are mounted at a fixed angle facing south, or they can be mounted on a tracking device that follows the sun, allowing them to capture the most sunlight. Many solar panels combined together to create one system is called a solar array. On-site, behind-the-meter, PV solar generation would serve as station auxiliary power and be deployed throughout the Project site.

1.2.3 Site Security

A six-foot-tall fence (e.g., chain-link) topped with one-foot-tall barbed wire would be installed around the entire Project site for safety and in order to control access. The switching station and each substation proposed on the site plan would also have fences installed around its perimeter. A camera-equipped call button would be installed at the front entry gate to the site which would be monitored from the Project's O&M facilities. Throughout the site at various points, security cameras may be installed to monitor other areas of the Project site. During the construction of each Project phase, the applicant would have on-site security personnel between dusk and dawn and during hours of non-active construction.

1.2.4 Interconnection Options

The proposed point of interconnection for the Project is the IV Substation 230 kV bus. As reflected in the conceptual site plan, to achieve this, the applicant plans to build a new loop-in switching station on the Project site and connect to the existing IID Campo Verde – Imperial Valley 230 kV radial gen-tie line. This existing gen-tie line ultimately connects to the IV Substation one-third mile south of the Project site. This location would serve as the Project's point of interconnection to the CAISO grid. The applicant has submitted the necessary Interconnection Request Applications to the CAISO and IID.

1.2.5 Existing and Proposed Utility Easements

a. Existing Easements

The Project site (APNs 051-350-10 and 051-350-011) has three major easements lying across the site. The first is for overhead collector transmission circuits and utility facilities, as well as access. This is for the IID Campo Verde – Imperial Valley 230 kV transmission line easement, which lies inside and along the west property line and runs north/south.

The second major easement is a prescriptive easement for an overhead transmission circuit and a utility distribution line that runs north and south and lies directly in the center of the Project site. The IID transmission line within this prescriptive easement is known as the S-Transmission line (S-Line). The third major easement lies along the north property line. This easement was granted to IID for the purposes of the existing Westside Main Canal and appropriate infrastructure and operation and maintenance roads adjacent to the Westside Main Canal.

b. Proposed Easements

The applicant and IID are in the process of determining the width of this S-Line easement to create a non-exclusive easement. This easement would also include the existing distribution line that lies within the easement. Until this new easement agreement is in place, the applicant has planned for a 300-foot temporary corridor on the Project site plan (centerline of 300-foot corridor is the S-Line) to allow the IID energy engineering team to design and implement an appropriate new easement. Once the width and location of the new easement is determined, all other areas not part of the new S-Line easement lying within the 300-foot corridor will become part of the Project site.

1.2.6 Project Operation

Operation of the Project would require routine maintenance and security. It is anticipated that the Project would employ a plant manager and an O&M manager, as well as the addition of a facility manager once the complex deploys approximately 500 MW of generation. The complex will also employ staff technicians, with at least one additional technician for every approximately 250 MW of capacity.

Operation of the Project at full build-out would require up to approximately 20 full-time employees depending upon the number of phases and type of energy storage facility constructed. The Project may require fewer full-time equivalent employees, but 20 was assumed to provide a conservative estimate. O&M employees would work typical weekday hours but may work extended hours, including weekends and 24 hours a day, depending upon the operations and maintenance needs. Assuming two one-way trips per employee, the Project would be anticipated to generate up to 40 trips per day from all maintenance and security personnel.

Figure 3a shows the conceptual site plan for the Project with a representation of lithium-ion buildings and containers as well as flow buildings and containers. The components that make up the energy storage systems and common facilities require various preventative maintenance and at times corrective maintenance. The O&M staff would maintain the Project in accordance with manufacturer and industry best practice maintenance schedules and requirements. Depending on the technology selected for the energy storage component, the substation and transmission lines as well as the behind-the-meter solar inverters and transformers would be energized at all times.

1.2.7 Discretionary Actions

1.2.7.1 General Plan Amendment and Rezone

The Project proposes a General Plan Amendment and Rezone to change the land use designation and zoning for the Project site from Agriculture (A3) to Industrial. The Industrial zoning would be limited to Energy Production/Use.

1.2.7.2 Development Agreement

The applicant may pursue a development agreement with the County of Imperial for this Project.

1.3 Criteria Pollutants

Air quality impacts can result from the emission of pollutants associated with construction and operation of a Project. Construction impacts are short term and may result from fugitive dust, equipment exhaust, and indirect effects associated with construction workers and deliveries. Operational impacts are long term and may result from equipment and processes used in the Project (e.g., water heaters, engines, boilers, and paints or solvents), motor vehicle emissions associated with the Project, regional impacts resulting from growth-inducing development, and local hot-spot effects stemming from sensitive receivers being placed close to highly congested roadways. Health effects can include the following:

- Increased respiratory infections
- Increased discomfort
- Missed days from work and school
- Increased mortality

The analysis of air quality impacts is based on the National and California Ambient Air Quality Standards (NAAQS and CAAQS). NAAQS and CAAQS represent the maximum levels of background pollution considered safe, with an adequate margin of safety, to protect the public health and welfare. Six pollutants of key concern known as "criteria pollutants" include ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb).

1.3.1 Ozone

Ozone is the primary component of smog. Ozone is not directly emitted into the air but is formed through complex chemical reactions between precursor emissions of nitrogen oxides (NO_X) and reactive organic gases (ROG) (a.k.a. volatile organic compounds [VOC] or reactive organic compounds) in the presence of sunlight. The adverse health effects associated with exposure to ozone pertain primarily to the respiratory system. Scientific evidence indicates that ambient levels of ozone affect not only sensitive receptors, such as asthma sufferers and children, but healthy adults as well. Exposure to ozone has been found to significantly alter lung functions by increasing respiratory rates and pulmonary resistance, decreasing tidal volumes (the amount of air inhaled and exhaled), and impairing respiratory mechanics. Symptomatic responses include throat dryness, chest tightness, headache, and nausea. About half of smog-forming emissions come from automobiles.

1.3.2 Carbon Monoxide

Carbon monoxide is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56 percent of all CO emissions nationwide. CO enters the bloodstream through the lungs by combining with hemoglobin, which normally supplies oxygen to the cells. However, CO combines with hemoglobin much more readily than oxygen does, resulting in a drastic reduction in the amount of oxygen available to the cells. Adverse health effects associated with exposure to CO concentrations include such symptoms as dizziness, headaches, and fatigue (United States Environmental Protection Agency [U.S. EPA] 2017a).

Small-scale, localized concentrations of CO above the NAAQS and CAAQS may occur at intersections with stagnation points such as those that occur on major highways and heavily traveled and congested roadways. Localized high concentrations of CO are referred to as "CO hotspots" and are a concern at congested intersections, where automobile engines burn fuel less efficiently and their exhaust contains more CO.

1.3.3 Nitrogen Dioxide

Nitrogen dioxide is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Inhalation is the most common route of exposure to NO_2. Because NO_2 has relatively low solubility in water, the principal site of toxicity is in the lower respiratory tract. The severity of the adverse health effects depends primarily on the concentration inhaled rather than the duration of exposure. An individual may experience a variety of acute symptoms, including coughing, difficulty with breathing, vomiting, headache, and eye irritation during or shortly after exposure. After a period of approximately 4 to 12 hours, an exposed individual may experience chemical pneumonitis or pulmonary edema with breathing abnormalities, cough, cyanosis, chest pain, and rapid heartbeat.

1.3.4 Sulfur Dioxide

Sulfur dioxide is a combustion product, with the primary source being power plants and heavy industries that use coal or oil as fuel. SO_2 is also a product of diesel engine combustion. The health effects of SO_2 include lung disease and breathing problems for people with asthma. SO_2 in the atmosphere contributes to the formation of acid rain.

1.3.5 Particulate Matter

Health studies have shown a significant association between exposure to particulate matter and premature death in people with heart or lung diseases. Other important effects include aggravation of respiratory and cardiovascular disease, lung disease, decreased lung function, asthma attacks, and certain cardiovascular problems such as heart attacks and irregular heartbeat (U.S. EPA 2017b).

1.3.5.1 Inhalable Coarse Particles (PM_{10})

PM_{10} is particulate matter with an aerodynamic diameter of 10 microns or less. Ten microns is about one-seventh of the diameter of a human hair. Particulate matter is a complex mixture of very tiny solid or liquid particles composed of chemicals, soot, and dust. Under typical conditions (i.e., no wildfires) particles classified under the PM_{10} category are mainly emitted directly from activities that disturb the soil including travel on roads and construction, mining, or agricultural operations. Other sources include windblown dust, salts, brake dust, and tire wear.

1.3.5.2 Inhalable Fine Particles ($PM_{2.5}$)

Airborne, inhalable particles with aerodynamic diameter of 2.5 microns or less have been recognized as an air quality concern requiring regular monitoring. Federal regulations required that $PM_{2.5}$ monitoring begin January 1, 1999. Similar to PM_{10}, $PM_{2.5}$ is also inhaled into the lungs and causes serious health problems.

1.3.6 Lead

Lead is a metal found naturally in the environment as well as in manufactured products. At high levels of exposure, lead can have detrimental effects on the central nervous system. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions.

2.0 Regulatory Framework

2.1 Federal Regulations

2.1.1 Criteria Pollutants

The NAAQS represent the maximum levels of background pollution considered safe, with an adequate margin of safety, to protect the public health and welfare. The Clean Air Act (CAA) was enacted in 1970 and amended in 1977 and 1990 (42 United States Code [USC] 7401) for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare, and productivity. In 1971, in order to achieve the purposes of Section 109 of the CAA (42 USC 7409), the U.S. EPA developed primary and secondary NAAQS.

Six criteria pollutants of primary concern have been designated: ozone, CO, SO_2, NO_2, lead, and respirable particulate matter (PM_{10} and $PM_{2.5}$). The primary NAAQS ". . . in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health . . . " and the secondary standards ". . . protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air" (42 USC 7409(b)(2)). The NAAQS are presented in Table 1 (California Air Resources Board [CARB] 2016).

An area within a state is designated as either attainment or non-attainment for a particular pollutant. States are required to adopt enforceable plans, known as a State Implementation Plan (SIP), to achieve and maintain air quality meeting the NAAQS. State plans also must control emissions that drift across state lines and harm air quality in downwind states. Once a non-attainment area has achieved the NAAQS for a particular pollutant, it is redesignated as an attainment area for that pollutant. To be redesignated, the area must meet air quality standards for three consecutive years. After redesignation to attainment, the area is known as a maintenance area and must develop a 10-year plan for continuing to meet and maintain air quality standards, as well as satisfy other requirements of the CAA.

The Project site is located in Imperial County, which is a moderate non-attainment area for the 1997 and 2008 federal ozone standards (U.S. EPA 2017c). The Imperial Valley portion of the county is a serious non-attainment area for the 1987 federal PM_{10} standard (U.S. EPA 2017c). The portion of Imperial County that includes El Centro and other cities in Imperial Valley (nonattainment area is defined by townships) is a moderate non-attainment area for the 2012 federal $PM_{2.5}$ standards (U.S. EPA 2017c). On May 13, 2017, the U.S. EPA issued a clean data determination declaring that Imperial County had achieved attainment of the 2006 federal $PM_{2.5}$ standard (U.S. EPA 2017d).

Table 1
State and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone[8]	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.07 ppm (137 µg/m³)		0.070 ppm (137 µg/m³)		
Respirable Particulate Matter (PM_{10})[9]	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		–		
Fine Particulate Matter ($PM_{2.5}$)[9]	24 Hour	No Separate State Standard		35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-dispersive Infrared Photometry	35 ppm (40 mg/m³)	–	Non-dispersive Infrared Photometry
	8 Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)	–	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		–	–	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemi-luminescence	100 ppb (188 µg/m³)	–	Gas Phase Chemi-luminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		0.053 ppm (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	–	Ultraviolet Fluorescence; Spectro-photometry (Pararosaniline Method)
	3 Hour	–		–	0.5 ppm (1,300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)[10]	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas)[10]	–	
Lead[12,13]	30 Day Average	1.5 µg/m³	Atomic Absorption	–	–	High Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m³ (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	–		0.15 µg/m³		
Visibility Reducing Particles[14]	8 Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m³	Ion Chroma-tography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chroma-tography			

See footnotes on next page.

Table 1
State and National Ambient Air Quality Standards

ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter; – = not applicable.

[1] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Any equivalent measurement method which can be shown to the satisfaction of the Air Resources Board to give equivalent results at or near the level of the air quality standard may be used.

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

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

[7] Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

[8] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[9] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standards of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

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

[11] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[12] The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

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

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

SOURCE: CARB 2016.

2.1.2 Nonroad Diesel Engine Standards

The U.S. EPA developed Nonroad Diesel Engine Standards in 1994. The standards apply to all engines rated over 50 horsepower in nearly all nonroad diesel equipment. Some of the most commonly regulated types of equipment include construction and farming equipment. The primary effect of the Nonroad Diesel Engine Standards has been to reduce NO_X and PM_{10} emissions from equipment subject to the standards.

The Nonroad Diesel Engine Standards have been phased-in in tiers. Tier 1 standards applied to engines sold between 1996 and 2000, Tier 2 standards applied to engines sold between 2001 and 2006, and Tier 3 standards applied to engines sold between 2006 and 2008. Additional Tier 4 standards were authorized in 2004, and were phased in for engines sold between 2008 and 2015.

While all new equipment must meet Tier 4 standards, existing equipment may continue to circulate. The U.S. EPA maintains replacement schedules for various sizes of equipment fleets that require retrofits or replacements over time to gradually bring the existing equipment up to standard.

2.2 State Regulations

2.2.1 Criteria Pollutants

The California Clean Air Act was enacted in 1988 (California Health & Safety Code Section 39000 et seq.). Under the California Clean Air Act, CARB has developed the CAAQS and generally has set more stringent limits on the criteria pollutants than the NAAQS (see Table 1). In addition to the federal criteria pollutants, the CAAQS also specify standards for visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride (see Table 1).

The state of California is divided geographically into 15 air basins for managing the air resources of the state on a regional basis. Areas within each air basin are considered to share the same air masses and, therefore, are expected to have similar ambient air quality. Similar to the CAA, the state classifies these specific geographic areas as either "attainment" or "nonattainment" areas for each pollutant based on the comparison of measured data with the CAAQS.

The Project site is located in the Salton Sea Air Basin, which encompasses Imperial County and parts of Riverside County (Coachella Valley). The Salton Sea Air Basin is a non-attainment area for the CAAQS for ozone and PM_{10} (CARB 2017).

2.2.2 Toxic Air Contaminants

The public's exposure to toxic air contaminants (TACs) is a significant public health issue in California. Diesel-exhaust particulate matter (DPM) emissions have been established as TACs. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health (Assembly

Bill [AB] 1807: California Health and Safety Code Sections 39650–39674). The California Legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

The California Air Toxics Program establishes the process for the identification and control of TACs and includes provisions to make the public aware of significant toxic exposures and for reducing risk. Additionally, the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly Bill) was enacted in 1987 and requires stationary sources to report the types and quantities of certain substances routinely released into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, to notify nearby residents of significant risks, and to reduce those significant risks to acceptable levels.

The Children's Environmental Health Protection Act, California Senate Bill (SB) 25 (Chapter 731, Escutia, Statutes of 1999), focuses on children's exposure to air pollutants. SB 25 requires CARB to review its air quality standards from a children's health perspective, evaluate the statewide air monitoring network, and develop any additional air toxic control measures needed to protect children's health. Locally, toxic air pollutants are regulated through the Imperial County Air Pollution Control District's (APCD) Regulation X. Of particular concern statewide are DPM emissions. DPM was established as a TAC in 1998, and is estimated to represent a majority of the cancer risk from TACs statewide (based on the statewide average). Diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by CARB and are listed as carcinogens either under the state's Proposition 65 or under the federal Hazardous Air Pollutants program.

Following the identification of DPM as a TAC in 1998, CARB has worked on developing strategies and regulations aimed at reducing the risk from DPM. The overall strategy for achieving these reductions is found in CARB's Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (CARB 2000). A stated goal of the plan is to reduce the statewide cancer risk arising from exposure to DPM by 85 percent by 2020.

In April 2005, CARB published the *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB 2005). The CARB Air Quality Handbook makes recommendations directed at protecting sensitive land uses from air pollutant emissions while balancing a myriad of other land use issues (e.g., housing, transportation needs, economics, etc.). It notes that the CARB Air Quality Handbook is not regulatory or binding on local agencies and recognizes that application takes a qualitative approach. As reflected in the CARB Air Quality Handbook, there is currently no adopted standard for the significance of health effects from mobile sources. Therefore, CARB has provided guidelines for the siting of land uses near heavily traveled roadways. Of pertinence to this analysis, CARB guidelines indicate that siting new sensitive land uses within 1,000 feet of distribution centers with heavy truck traffic should be avoided when possible.

As an ongoing process, CARB will continue to establish new programs and regulations for the control of diesel particulate and other air-toxics emissions as appropriate. The continued development and implementation of these programs and policies will continue to reduce the public's exposure to DPM.

2.2.3 State Implementation Plan

The California SIP is a collection of documents that set forth the state's strategies for achieving the NAAQS. The California SIP is a compilation of new and previously submitted plans, programs (such as air quality management plans, monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls. CARB is the lead agency for all purposes related to the California SIP under federal law. Local air districts and other agencies, such as the Department of Pesticide Regulation and the Bureau of Automotive Repair, prepare SIP elements and submit them to CARB for review and approval. CARB then forwards revisions to the U.S. EPA for approval and publication in the *Federal Register*. All of the items included in the California SIP are listed in the Code of Federal Regulations (CFR) at 40 CFR 52.220.

The Imperial County APCD is responsible for preparing and implementing the portion of the California SIP applicable to the portion of the Salton Sea Air Basin that is in Imperial County. These portions include:

- Imperial County 2009 State Implementation Plan for Particulate matter Less than 10 Microns in Aerodynamic Diameter
- Imperial County 2013 State Implementation Plan for the 2006 24-Hour $PM_{2.5}$ Moderate Non-attainment Area
- Imperial County 2017 State Implementation Plan for the 2008 8-Hour Ozone Standard

2.2.4 California In-Use Off-Road Diesel-Fueled Fleets Regulation

The California In-Use Off-Road Diesel-Fueled Fleets Regulations were approved by CARB in July 2007, and subsequent major amendments were incorporated in December 2011. The regulations are intended to reduce diesel-exhaust and NO_X emissions from in-use off-road heavy-duty diesel vehicles in California. The regulation requires that any operator of diesel-powered off-road vehicles with 25-horsepower or greater engines meet specific fleet average targets. CARB maintains schedules for small, medium, and large equipment fleets that require equipment retrofits or replacements over time to gradually bring the existing equipment up to standard. As of January 2018, all newly purchased equipment for medium and large equipment fleets will be required to meet Tier 3 or higher engine standards.

2.3 Local Regulations

2.3.1 CEQA Air Quality Handbook

The Imperial County APCD adopted its *CEQA Air Quality Handbook: Guidelines for the Implementation of the California Environmental Quality Act of 1970* in 2007 and amended the handbook in December 2017 (Imperial County APCD 2017a). The Imperial County APCD CEQA Air Quality Handbook provides guidance on how to determine the significance of impacts, including air pollutant emissions, related to the development of residential, commercial, and industrial projects. Where impacts are determined to be significant, the Imperial County APCD CEQA Air Quality Handbook provides guidance to mitigate adverse impacts to air quality from development projects.

2.3.2 Stationary Source Permitting

Pursuant to Imperial County APCD Rule 207 (New & Modified Stationary Source Review) and associated rules such as Rule 201 (Permits Required) and Rule 208 (Permit to Operate), the construction, installation, modification, replacement, and operation of any equipment which may emit air contaminants requires Imperial County APCD permits. The Imperial County APCD requires that all such equipment be assessed for the potential to result in health risk impacts, and permits to operate equipment must be renewed each year equipment is in use or upon the modification of equipment.

2.3.3 Fugitive Dust Control

The Imperial County APCD Regulation VIII regulates emissions of fugitive dust. Fugitive dust is:

> Particulate Matter entrained in the ambient air which is caused from man-made and natural activities such as, but not limited to, movement of soil, vehicles, equipment, blasting, and wind. This excludes Particulate Matter emitted directly in the exhaust of motor vehicles or other fuel combustion devices, from portable brazing, soldering, or welding equipment, pile drivers, and stack emissions from stationary sources (Imperial County APCD, Rule 800 (c)(18)).

Regulation VIII includes the following specific rules:

- Rule 800–Fugitive Dust Requirements for Control of $PM_{2.5}$
- Rule 801–Construction and Earthmoving Activities
- Rule 802–Bulk Materials
- Rule 803–Carry Out and Track Out
- Rule 804–Open Areas
- Rule 805–Paved and Unpaved Roads
- Rule 806–Conservation Management Practices

3.0 Environmental Setting

3.1 Land Use Environment

The Project site was previously graded and used as farmland and has been fallow for more than 15 years. The General Plan land use designation and zoning for the Project site and all surrounding parcels to the north and east is Agriculture (A3). The General Plan land use designation for parcels to the south and west are designated open space/recreation areas; zoning does not apply to these BLM lands. The Campo Verde solar generation facility is located north of the Project site and agricultural uses are located northeast of the Project site. Parcels farther north of the Project site also include a mix of agricultural uses and solar generation facilities. The parcel immediately east of the Project site is undeveloped. BLM land south and west of the Project site is generally undeveloped, relatively flat, and barren. The Imperial Valley Substation is located approximately one-third mile south of the southern property line of the site.

3.2 Regional Setting and Climate

Climate conditions at the Project site, like the rest of Imperial County, are governed by the large-scale sinking and warming of air in the semi-permanent tropical high-pressure center of the Pacific Ocean. The high-pressure ridge blocks out most storms except in winter when it is weakest and farthest south. The coastal mountains prevent the intrusion of any cool, damp air found in California coastal environs. Because of the barrier and weakened storms, Imperial County experiences clear skies, extremely hot summers, mild winters, and little rainfall (Imperial County APCD 2017b).

Winters are mild and dry with daily average temperatures ranging between 65 and 75 degrees Fahrenheit (°F). Summers are extremely hot with daily average temperatures ranging between 104 and 115°F. The flat terrain and the strong temperature differentials created by intense solar heating result in moderate winds and deep thermal convection. The combination of subsiding air, protective mountains, and distance from the ocean all combine to severely limit precipitation (Imperial County APCD 2017b).

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. 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 and this occurs most frequently during the months of April and May. However, speeds of less than 6.8 miles per hour account for more than one-half of the observed wind measurements (Imperial County APCD 2017b).

3.3 Existing Air Quality

Air quality at a particular location is a function of the kinds, amounts, and dispersal rates of pollutants being emitted into the air locally and regionally. The major factors affecting pollutant dispersion are wind speed and direction, the vertical dispersion of pollutants (which is affected by temperature inversions), and topography.

Imperial County experiences surface inversions almost every day of the year. Due to strong surface heating, these inversions are usually broken and allow pollutants to be more easily dispersed. In some circumstances, the presence of the Pacific high-pressure cell can cause the air to warm to a temperature higher than the air below. This highly stable atmospheric condition, termed a subsidence inversion, can act as a nearly impenetrable lid to the vertical mixing of pollutants. The strength of these inversions makes them difficult to disrupt. Consequently, they can persist for one or more days, causing air stagnation and the build-up of pollutants. Highest and worst-case ozone levels are often associated with the presence of subsidence inversions (Imperial County APCD 2017b).

Air quality is commonly expressed as the number of days in which air pollution levels exceed state standards set by CARB or federal standards set by the U.S. EPA. The Imperial County APCD maintains five air quality monitoring stations located throughout the region. Air pollutant concentrations and meteorological information are continuously recorded at these stations. Measurements are then used by scientists to help forecast daily air pollution levels, and to gauge compliance with state and federal air quality standards.

The nearest active monitoring station is the El Centro Monitoring Station located approximately 9.6 miles northeast of the Project site. The El Centro Monitoring Station measures ozone, NO_2, PM_{10}, and $PM_{2.5}$. Table 2 provides a summary of measurements collected at the El Centro Monitoring Station for the years 2016 through 2018.

Table 2 Summary of Air Quality Measurements - El Centro Monitoring Station			
Pollutant/Standard	2016	2017	2018
Ozone			
Days State 1-hour Standard Exceeded (0.09 ppm)	4	4	2
Days State 8-hour Standard Exceeded (0.07 ppm)	11	17	14
Days Federal 8-hour Standard Exceeded (0.07 ppm)	11	17	14
Maximum 1-hr (ppm)	0.108	0.110	0.102
Maximum 8-hr (ppm)	0.082	0.092	0.090
Nitrogen Dioxide			
Days State 1-hour Standard Exceeded (0.18 ppm)	0	0	0
Days Federal 1-hour Standard Exceeded (0.100 ppm)	0	0	0
Maximum 1-hr (ppm)	0.051	0.049	0.034
Annual Average (ppm)	0.005	--	--
PM_{10}*			
Measured Days State 24-hour Standard Exceeded (50 µg/m^3)	--	--	--
Calculated Days State 24-hour Standard Exceeded (50 µg/m^3)	--	--	--
Measured Days Federal 24-hour Standard Exceeded (150 µg/m^3)	10	4	5
Calculated Days Federal 24-hour Standard Exceeded (150 µg/m^3)	10.0	4.0	5.1
Maximum Daily (µg/m^3)	284.9	268.5	253.0
State Annual Average (µg/m^3)	--	--	--
Federal Annual Average (µg/m^3)	45.0	41.3	46.9
$PM_{2.5}$*			
Measured Days Federal 24-hour Standard Exceeded (35 µg/m^3)	0	0	0
Calculated Days Federal 24-hour Standard Exceeded (35 µg/m^3)	0.0	0.0	0.0
Maximum Daily (µg/m^3)	31.3	23.2	22.4
State Annual Average (µg/m^3)	9.5	8.4	8.7
Federal Annual Average (µg/m^3)	9.4	8.4	8.6

SOURCE: California Air Resources Board (CARB) 2020.
ppm = parts per million; µg/m^3 = micrograms per cubic meter
* Calculated days value. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

4.0 Thresholds of Significance

The California Natural Resources Agency maintains State CEQA Guidelines to assist lead agencies in developing significance thresholds for assessing potentially significant environmental impacts. According to the CEQA Guidelines Appendix G Environmental Checklist, implementation of the Project would have significant environmental impacts on air quality if it would:

1) Obstruct or conflict with the implementation of the applicable air quality plan.
2) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
3) Expose sensitive receptors to substantial pollutant concentration including air toxics such as diesel particulates.

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

As stated in the State CEQA Guidelines, these questions are "intended to encourage thoughtful assessment of impacts and do not necessarily represent thresholds of significance" (Title 14, Division 6, Chapter 3 Guidelines for Implementation of the CEQA, Appendix G, Environmental Checklist Form). The State CEQA Guidelines encourage lead agencies to adopt regionally specific thresholds of significance. When adopting these thresholds, the amended Guidelines allow lead agencies to consider thresholds of significance adopted or recommended by other public agencies, or recommended by experts, provided that the thresholds are supported by substantial evidence.

The Imperial County APCD CEQA Air Quality Handbook establishes the following four separate evaluation categories (Imperial County APCD 2017a):

1) Comparison of calculated project emissions to Imperial County APCD emission thresholds.
2) Consistency with the most recent Clean Air Plan for Imperial County.
3) Comparison of predicted ambient pollutant concentrations resulting from the project to state and federal health standards, when applicable.
4) The evaluation of special conditions which apply to certain projects.

Any development with a potential to emit criteria pollutants below significance levels defined by the Imperial County APCD is called a "Tier I project," and is considered by the Imperial County APCD to have less than significant potential adverse impacts on local air quality. For Tier I projects, the project proponent should implement a set of feasible "standard" mitigation measures (enumerated by the Imperial County APCD) to reduce the air quality impact to an insignificant level. A "Tier II project" is one whose emissions exceed any of the thresholds. Its impact is significant and the project proponent should select and implement all feasible "discretionary" mitigation measures (also enumerated by the Imperial County APCD) in addition to the standard measures.

4.1 Operational Impacts

Table 3 provides general guidelines for determining the significance of impacts based on the total emissions that are expected from project operation established by the Imperial County APCD.

Table 3
Significance Thresholds for Operations

Pollutant	Tier I	Tier II
NO_X and ROG	Less than 137 lbs/day	137 lbs/day and greater
PM_{10} and SO_X	Less than 150 lbs/day	150 lbs/day and greater
CO and $PM_{2.5}$	Less than 550 lbs/day	550 lbs/day and greater

ROG = reactive organic gas; NO_X = oxides of nitrogen; CO = carbon monoxide; PM_{10} = particulate matter with an aerodynamic diameter 10 microns or less; lbs/day = pounds per day
SOURCE: Imperial County APCD 2017a.

As stated above, Tier 1 projects are required to implement all feasible standard measures specified by the Imperial County APCD. Tier II projects are required to implement all feasible standard measures as well as all feasible discretionary measures specified by the Imperial County APCD.

4.2 Construction Impacts

The Imperial County APCD has also established thresholds of significance for project construction. Table 4 provides general guidelines for determining significance of impacts based on the total emissions that are expected from project construction.

Table 4
Significance Thresholds for Construction

Pollutant	Thresholds (pounds/day)
PM_{10}	150
ROG	75
NO_X	100
CO	550

ROG = reactive organic gas; NO_X = oxides of nitrogen;
CO = carbon monoxide; PM_{10} = particulate matter with an aerodynamic diameter 10 microns or less.
SOURCE: Imperial County APCD 2017a.

Regardless of project size, all feasible standard measures specified by the Imperial County APCD for construction equipment and fugitive PM_{10} control for construction activities should be implemented at construction sites. Control measures for fugitive PM_{10} construction emissions in Imperial County are found in Imperial County APCD Regulation VIII and in the Imperial County APCD CEQA Air Quality Handbook and are discussed below.

4.3 Public Nuisance Law (Odors)

State of California Health and Safety Code Sections 41700 and 41705 and Imperial County APCD Rule 407 prohibit emissions from any source whatsoever in quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to the public health or damage to property.

The Imperial County APCD CEQA Air Quality Handbook provides screening level distances for potential odor sources. If a project is proposed within one mile of a wastewater treatment plant, sanitary landfill, composting station, feedlot, asphalt plant, painting and coating operation, or rendering plant, a potential odor problem may result (Imperial County APCD 2017a).

5.0 Air Quality Assessment

Implementation of the Project would result in air pollutant emissions associated with the construction and operation. Emissions were calculated using California Emissions Estimator Model (CalEEMod) Version 2016.3.2 (California Air Pollution Control Officers Association [CAPCOA] 2017). The CalEEMod program is a tool used to estimate emissions resulting from land development projects in the state of California. CalEEMod was developed with the participation of several state air districts including the South Coast Air Quality Management District (SCAQMD).

CalEEMod estimates parameters such as the type and amount of construction equipment required, trip generation, and utility consumption based on the size and type of each specific land use using data collected from surveys performed in SCAQMD. Where available, parameters were modified to reflect project-specific data.

5.1 Construction-related Emissions

Construction-related activities are temporary, short-term sources of air pollutant emissions. Sources of construction-related emissions include:

- Fugitive dust from grading activities;
- Exhaust emissions from construction equipment;
- Application of chemical coatings (paints, stains, sealants, etc.); and
- Exhaust and fugitive dust emission from on-road vehicles (trips by workers, delivery trucks, and material-hauling trucks).

The Project would be constructed in three to five phases over a 10-year period. For the purposes of this CEQA analysis, it was assumed that construction activities would last for a total of approximately 32 months to complete the full Project build-out. Construction of the access road from the north of the Project site, the bridge over the IID canal, and common facilities (including site grading and infrastructure, O&M building construction and substation construction) on the Project site south of the IID canal would occur simultaneously in order to reduce the overall construction schedule. This first phase of construction as well as construction of the first battery storage phase is anticipated to last for 12 months. Total construction of the subsequent battery storage phases is anticipated to last for 20 months. Construction emissions were calculated assuming construction activities would begin in 2021 and last for 32 consecutive months. This is conservative because if sequential construction activities were to occur at a later date, emissions would be less since construction equipment gets cleaner over time due to statewide rules and regulations.

In order to begin construction on the Project site prior to completion of the bridge, construction equipment would be hauled to the Project site. The Project Proponent is evaluating various options for temporary construction access, including accessing the Project site from the south side of the Westside Main Canal off SR-98, as well as options involving access from the north side of the Westside Main Canal from I-8. Under access Option 1, all construction equipment and material deliveries would access the site from the south along

the 5.6-mile unpaved road until completion of the access road and bridge north of the Project site. The first 4.4 miles of the access road is an existing unpaved service road consisting of well compacted dirt and crushed rock, and the last 1.2 miles is an unpaved dirt road that would be covered with construction mats. To access the Project site, construction workers would travel along I-8 and head 4.6 miles south to the Project site, and would utilize the IID Fern Check Bridge as a pedestrian bridge until the permanent bridge is constructed. A majority of this worker access route is paved, and the last approximately 0.3 mile is an unpaved dirt road. Under access Option 2, all material deliveries would access the site using the IID Westside Main Canal access road. As the Option 1 distance is longer than Option 2, emissions were calculated using access Option 1. During peak construction activities, approximately 200 workers and 30 daily deliveries would be required.

5.1.1 Mobilization Fugitive Dust

Mobilization fugitive dust calculations were modeled based on utilization Option 1. As discussed in Section 5.1 above, the first 4.4 miles of the access road is an existing unpaved service road consisting of well compacted dirt and crushed rock, and 1.2 miles is an unpaved dirt road that would be covered with construction mats. Hauling equipment to the Project site would result in emissions of fugitive dust. Fugitive dust (PM_{10} and $PM_{2.5}$) emissions were calculated using U.S. EPA AP-42 methodology for calculating unpaved road dust emissions. The following equation was used:

$$E = k \times (s/12)^a \times (W/3)^b \div (M/0.2)^c$$

Where,

E = Emission factor (pounds per mile traveled)
s = surface material silt content (percent)
W = mean vehicle weight (tons)
M = surface material moisture content (percent)
k, a, b, c = empirical constants for PM_{10} and $PM_{2.5}$

For construction equipment mobilization, emissions were calculated without dust control measures. It is anticipated that up to eight pieces of construction equipment would be hauled to the site per day during Project mobilization.

5.1.2 Grading Fugitive Dust

Fugitive dust would be associated with construction activities that involve ground disturbance. Calculation of fugitive dust emissions are based on the area of disturbed ground and the fugitive dust measures implemented.

The Imperial County APCD requires that, regardless of the size of a project, all feasible standard measures for fugitive PM_{10} must be implemented at construction sites. Standard measures from the Imperial County APCD handbook are listed below.

Standard Measures for Fugitive PM_{10} Control:

a) 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% opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps or other suitable material such as vegetative ground cover.

b) All on site and off site unpaved roads will be effectively stabilized and visible emissions shall be limited to no greater than 20% opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.

c) All unpaved traffic areas one (1) acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emission shall be limited to no greater than 20% opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering. The transport of Bulk Materials shall be completely covered unless six 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.

d) The transport of Bulk Materials shall be completely covered unless six 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.

e) 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.

f) 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.

g) 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% opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering.

Construction emission estimates account for stabilization of unpaved roads, limiting vehicle speeds on unpaved roads, track-out control devices, and replacement of ground cover based on SCAQMD's Fugitive Dust Mitigation Tables (SCAQMD 2007). The dust control efficiencies are summarized in Table 5. Note that during all construction activities, the water truck would get water directly from the IID canal immediately adjacent to the Project site and,

therefore, there would not be any emissions associated with transporting water to the Project site.

Table 5
Fugitive Dust Mitigation Efficiencies

Activity	Measure	PM_{10} Control Efficiency
Track-out	Use a gravel apron, 25 feet long by road width, to reduce mud/dirt track-out from unpaved truck exit routes.	46%
Travel over unpaved roads (15 miles per hour [mph])	Limit maximum speed on unpaved roads to 15 miles per hour.	57%
Travel over unpaved roads (25 mph)	Limit maximum speed on unpaved roads to 25 miles per hour.	44%
Water Truck	Apply water every 3 hours to disturbed areas within a construction site.	61%
Grading	Replace ground cover in disturbed areas as quickly as possible.	5%
Travel over unpaved roads	Apply chemical dust suppressant annually to unpaved parking areas.	84%
SOURCE: SCAQMD 2007		

5.1.3 Equipment Exhaust

The equipment anticipated to be used in Project construction was provided by the Project applicant and is shown below in Table 6.

Table 6
Anticipated Construction Schedule and Equipment

	Phase 1 (12 months)			Phases 2–5 (20 months)		
Construction Equipment	Bridge	Substation	Battery Storage	Battery Storage	Horse-power	Load Factor
Wheeled Loader	--	--	1	1	97	0.37
Scraper	--	--	1	1	367	0.48
Grader	--	--	1	1	187	0.41
Dozer	--	--	1	1	247	0.40
Excavator	--	--	1	1	158	0.38
Backhoe	1	1	1	1	97	0.37
Rollers	1	1	1	1	80	0.38
Forklift	1	1	1	1	89	0.20
Crane	--	3	3	3	231	0.29
Skid Steer	--	1	2	2	97	0.37
Water Truck[1]	--	--	1	1	402	0.38
Drill Rig	1	--	--	--	221	0.50

NOTE: Each construction activity would also require a number of pick-up trucks. Emissions associated with pick-up trucks are included in the worker commute calculations.
[1]Water truck modeled as off-highway truck.

CalEEMod calculates emissions of all pollutants from construction equipment using emission factors from CARB's off-road diesel equipment emission factors database, OFFROAD 2011 (CARB 2011). Consistent with CARB requirements, all equipment was assumed to meet CARB Tier 3 In-Use Off-Road Diesel Engine Standards.

The Imperial County APCD requires that, regardless of the size of a project, all feasible standard measures for construction equipment must be implemented at construction sites. Standard measures from the Imperial County APCD handbook are listed below.

Standard Measures for Construction Combustion Equipment

a) Use of alternative fueled or catalyst equipped diesel construction equipment, including all off-road and portable diesel powered equipment.

b) Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes as a maximum.

c) Limit, to the extent feasible, the hours of operation of heavy duty equipment and/or the amount of equipment in use.

d) Replace fossil fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).

5.1.4 On-road Vehicle Emissions

Construction would generate mobile source emissions from worker trips and material delivery (vendor) trips. As discussed, construction workers would travel along I-8 and head 4.6 miles south to the Project site, and would utilize the IID Fern Check Bridge as a pedestrian bridge until the permanent bridge is constructed. All construction equipment and material deliveries would access the site from the south until completion of the access road and bridge. As required by the Imperial County APCD standard PM_{10} mitigation measures, to reduce dust, the unpaved access road would either be watered or a chemical dust suppressant would be applied. As shown in Table 5, use of a water truck to apply water every 3 hours would reduce emissions by 61 percent, and chemical dust suppressants would reduce emissions by 84 percent. Since the use of a water truck is less efficient at reducing dust, this was included in the emission calculations; however, either dust suppressant method may be used. A reduced speed of 15 mph was modeled. During peak construction activities for the utility-scale energy storage complex, approximately 200 workers, and 30 daily deliveries would be required.

CalEEMod calculates emissions of all pollutants from on-road trucks and passenger vehicles using emission factors derived from CARB's motor vehicle emission inventory program EMFAC2014 (CARB 2014). Vehicle emission factors were multiplied by the total estimated number of trips and the average trip length to calculate the total mobile emissions.

5.1.5 Construction Emission Estimates

5.1.5.1 Mobilization Fugitive Dust

Using the methodology summarized in Section 5.1.1, fugitive dust emissions were calculated. Maximum daily emissions were calculated based on up to eight pieces of equipment being delivered to the site per day. These maximum daily emissions were also calculated assuming that the 1.2-mile portion of the access road from the IV Substation to the Project site would

be covered with construction mats, and that speeds on the access road would be limited to 15 mph. Fugitive dust emissions are summarized in Table 7, and calculations are provided in Attachment 1.

Table 7
Equipment Mobilization Fugitive Dust Emissions
(pounds per day)

Amount Delivered to Site Per Day	PM_{10}	$PM_{2.5}$
1	18	3
2	36	5
3	54	8
4	72	10
5	90	13
6	108	16
7	126	18
8	144	21

As shown in Table 7, with up to eight pieces of equipment delivered to the site per day, PM_{10} emissions are not anticipated to exceed the threshold of 150 pounds per day. There is no construction emission threshold for $PM_{2.5}$. Emissions of $PM_{2.5}$ are provided for informational purposes only. The results of the analysis presented in Table 7 assumes compliance with the measures presented in MM-AIR-1 below, which would ensure that impacts would be less than significant.

MM-AIR-1: The following measures would be required for construction equipment mobilization:

- The 1.2-mile portion of the access road from the IV Substation to the Project site shall be covered with construction mats.
- No more than eight pieces of construction equipment shall be delivered to the Project site in one day.
- A speed limit of 15 mph on the access road shall be enforced.

5.1.5.2 Construction Emissions

Construction activities would begin once the needed construction equipment has been delivered to the Project site. Maximum daily emissions associated with mobilization, the first phase, and subsequent phases two through five are summarized in Table 8. CalEEMod output files for Project construction and operations are contained in Attachment 2.

Table 8 Maximum Daily Construction Air Pollutant Emissions						
Emission Source	Maximum Daily Emissions (pounds)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Mobilization/Access Road (January 2021, prior to start of on-site construction activities)						
Construction Equipment	<1	5	6	<1	<1	<1
Delivery Truck Trips	<1	2	1	<1	<1	<1
Worker Trips	<1	<1	1	<1	<1	<1
Access Road Fugitive Dust (see Section 5.1.5.1)	0	0	0	0	144	21
Total	**<1**	**7**	**7**	**<1**	**144**	**21**
Significance Threshold	*75*	*100*	*550*	-	*150*	-
Exceeds Threshold?	No	No	No	-	No	-
Bridge, Substation, Common Facilities, and Battery Storage Phase 1 (February 2021 – December 2021)						
Construction Equipment	4	71	86	<1	3	3
On-Site Fugitive Dust (Grading)	<1	<1	<1	<1	<1	<1
Material Deliveries	<1	9	3	<1	48	5
Worker Trips	5	4	30	<1	48	6
Architectural Coatings	14	0	0	0	0	0
Total	**22**	**84**	**119**	**<1**	**100**	**14**
Significance Threshold	*75*	*100*	*550*	-	*150*	-
Exceeds Threshold?	No	No	No	-	No	-
Battery Storage Phases 2-5 (January 2022 – August 2023)						
Construction Equipment	2	41	49	<1	2	2
Material Deliveries	<1	8	2	<1	7	1
Worker Trips	4	4	28	<1	48	6
Total	**7**	**52**	**79**	**<1**	**58**	**9**
Significance Threshold	*75*	*100*	*550*	-	*150*	-
Exceeds Threshold?	No	No	No	-	No	-

SOURCE: Attachment 2
NOTE: Totals may vary due to independent rounding.
ROG = reactive organic gas; NO_X = oxides of nitrogen; CO = carbon monoxide;
PM_{10} = particulate matter with an aerodynamic diameter 10 microns or less;
$PM_{.5}$ = particulate matter with an aerodynamic diameter 2.5 microns or less

As shown in Table 8, construction emissions are not anticipated to exceed the applicable significance thresholds for all criteria pollutants. The results of the analysis presented in Table 8 assumes compliance with the measures presented in MM-AIR-2 below, which would ensure that impacts would be less than significant.

MM-AIR-2: The following measures would be required for construction activities:

- The 1.2-mile portion of the southern access road from the IV Substation to the Project site shall be covered with construction mats.
- A material delivery speed limit of 15 mph on the access road shall be enforced.

- For material deliveries from the south, one of the following dust suppressant measures would be required for the 4.4-mile service road:
    - A water truck shall apply water every 3 hours, or as deliveries occur; or
    - A chemical dust suppressant shall be applied.
- For the 0.3-mile portion of the northern access route that is unpaved (south of Wixom Road to the worker parking area) one of the following dust suppressant measures would be required:
    - A water truck shall apply water every 3 hours, or as worker access occurs; or
    - A chemical dust suppressant shall be applied.
- A water truck shall apply water to all active on-site grading areas every 3 hours.

5.2 Operation-related Emissions

Operation-related sources of air pollutant emissions include the direct emission of criteria pollutants. Common direct emission sources include mobile sources such as project-generated traffic and area sources such as the use of landscaping equipment.

5.2.1 Mobile Sources

CalEEMod calculates mobile source emissions using emission factors derived from CARB's motor vehicle emission inventory program, EMFAC2014 (CARB 2014). Operation of the Project would require up to 20 employees. Assuming two one-way trips per employee, the Project would be anticipated to generate up to 40 trips per day from all maintenance and security personnel. A 20-mile trip length was modeled.

5.2.2 Energy Sources

CalEEMod calculated emissions associated with building electricity and natural gas usage. Energy sources are mostly associated with greenhouse gas emissions; however, there are also minimal criteria pollutant emissions from energy sources. Emissions were calculated using 2016 Title 24 Energy Code standards. This is conservative since the O&M building would be required to comply with the more recent 2019 Title 24 Energy Code, which is more energy efficient than the previous version.

5.2.3 Area Sources

An area source is any non-permitted stationary source of emission. Common area sources include fireplaces, natural gas used in space and water heating, consumer products, architectural coatings, dust from farming operations, landscaping equipment, and small combustion equipment such as boilers or backup generators. The Project does not include measurable amounts of fireplace use, natural gas use, consumer products, architectural coatings, or other area sources.

Routine weed abatement and landscape maintenance would occur as needed. The Project site is bounded by roads, agricultural uses, and solar generation facilities. As the Project is not

adjacent to natural lands, landscaping maintenance for maintaining a fire-clearing zone would be minimal and would result in less than measurable emissions.

5.2.4 Propane-Fueled Emergency Generators

As discussed in Section 1.2.2.3(b) above, the Project would include emergency backup propane-fueled generators to augment the backup battery storage capacity, as well as BTM solar power generation during rare events in which the entire facility, or portions of the facility, are disconnected from the electrical grid. The generators would be periodically tested (monthly) to maintain backup capability in the event of a grid emergency. Emissions due to emergency generator testing were calculated using emission factors provided in the generator specifications. The Project would include up to 20 propane-fueled generators. The exact testing schedule is not known at this time. For the purposes of the emission calculations, it was assumed that each of the 20 generators would be tested once per month for a total operation time of two hours each per month. If all generators were to be tested on the same day, this would be a total of 40 hours of cumulative operation time per day. Emissions were calculated using U.S. EPA AP-42 emission factors and a fuel consumption rate of approximately 23 gallons per hour, based on specifications for a representative propane-fueled generator.

5.2.5 Operations Emission Estimates

Table 9 provides a summary of the criteria pollutant emissions generated by the Project operations. CalEEMod output files for Project construction and operations are contained in Attachment 2. Calculations for propane-fueled emergency generator testing are provided in Attachment 3.

Table 9
Maximum Daily Operations Air Pollutant Emissions

Emission Source	Maximum Daily Emissions (pounds)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area Sources	12	<1	<1	0	<1	<1
Energy Sources	<1	<1	<1	<1	<1	<1
Mobile Sources	1	7	13	<1	48	5
Emergency Generator Testing	1	12	7	<1	1	1
Total Operations	**14**	**19**	**20**	**<1**	**48**	**6**
Significance Threshold	*137*	*137*	*550*	*150*	*150*	*550*
Exceeds Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

SOURCE: Attachments 2 and 3
NOTE: Totals may vary due to independent rounding.
ROG = reactive organic gas; NO_X = oxides of nitrogen; CO = carbon monoxide;
PM_{10} = particulate matter with an aerodynamic diameter 10 microns or less;
$PM_{2.5}$ = particulate matter with an aerodynamic diameter 2.5 microns or less

To ensure that fugitive dust emissions would be controlled during project operation, the following mitigation would be required.

MM-AIR-3: Operational Dust Control Plan:

To help reduce fugitive dust emissions from on-site unpaved roads and accumulation of small dunes during operations, an Operational Dust Control Plan (ODCP) would be prepared. The ODCP would include strategies for how dust emissions would be controlled and maintained during Project operations. The ODCP would be submitted to the Imperial County APCD for approval prior to the issuance of a Certificate of Occupancy.

5.3 Project-Level Impact Analysis

As discussed in Section 4.0, the California Natural Resources Agency's State CEQA Guidelines includes questions that were developed to encourage thoughtful assessment of impacts. Project impact assessment consistent with these CEQA checklist questions is provided below.

1. *Would the project obstruct or conflict with the implementation of the applicable air quality plan?*

CARB is the lead agency for preparation of the California SIP, which outlines the state measures to achieve NAAQS. CARB delegates responsibility for preparation of SIP elements to local air districts and requires local air districts to prepare Air Quality Attainment Plans outlining measures required to achieve CAAQS.

The Imperial County APCD is the air district responsible for the Project area. Applicable Imperial County APCD air quality plans include:

- Imperial County 2009 State Implementation Plan for Particulate matter Less than 10 Microns in Aerodynamic Diameter;
- Imperial County 2013 State Implementation Plan for the 2006 24-Hour $PM_{2.5}$ Moderate Non-attainment Area; and
- Imperial County 2017 State Implementation Plan for the 2008 8-Hour Ozone Standard.

The primary concern for assessing consistency with air quality plans is whether the project would induce growth that would result in a net increase in criteria pollutant emissions that exceeds the assumptions used to develop the plan. The criteria pollutant emission projections for the Imperial County APCD air quality plans are based on Southern California Association of Governments' (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 criteria pollutant emissions estimates. In the event that 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.

The existing land use designation for the Project site of Agriculture (A3) is assigned a trip generation rate of two vehicle trips per acre per day (County of Imperial 2008). Based on this trip generation rate, the 148-acre Project site would generate approximately 296 daily trips as an agricultural use. The Project proposes a General Plan Amendment and Rezone to change land use designation and zoning for the Project site from Agriculture (A3) to Industrial. As described in Section 5.2.1, Project operations would generate up to 40 trips per day, which would be less than the 296 daily trips that would be generated by the Project site as an agricultural use. Therefore, mobile source emissions associated with the Project would be less than what is accounted for in the Imperial County APCD air quality plans that originally considered the Project site as an agricultural use. Furthermore, the Project would not construct housing or other uses that would result in regional population growth. Therefore, the Project would not result in new growth beyond what was originally anticipated in SCAG's growth projections for Imperial County. Additionally, as summarized in Table 9, operation of the Project would result in emissions that are well below all applicable project-level significance thresholds. Therefore, Project emissions would be consistent with SCAG's growth projections and the Imperial County APCD's air quality plans, and impacts would be less than significant.

2. *Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?*

The Project site is in non-attainment areas for NAAQS and CAAQS for ozone and particulate matter. The majority of regional PM_{10} and $PM_{2.5}$ emissions originate from dust stirred up by wind or by vehicle traffic on unpaved roads (Imperial County APCD 2009). Other PM_{10} and $PM_{2.5}$ emissions originate from grinding operations, combustion sources such as motor vehicles, power plants, wood burning, forest fires, agricultural burning, and industrial processes. Ozone is not emitted directly, but is a result of atmospheric activity on precursors. NO_X and ROG are known as the chief "precursors" of ozone. These compounds react in the presence of sunlight to produce ozone. Approximately 88 percent of NO_X and 40 percent of ROG regional emissions originate from on- and off-road vehicles (Imperial County APCD 2010). Other major sources include solvent evaporation and miscellaneous processes such as pesticide application.

As shown in Tables 7 and 8 above, all construction-related emissions would be less than the applicable Imperial County APCD significance thresholds. The results of the analysis presented in Tables 7 and 8 assumed compliance with the measures presented in MM-AIR-1 and MM-AIR-2, which would ensure that impacts would be less than significant.

With implementation of these measures, construction emissions would be less than significant. Note that the Project is also required to comply with all Imperial County APCD standard measures for fugitive dust and construction equipment. Since the Project's construction emissions would be less than the project-level significance thresholds and would comply with all Imperial County APCD measures including Regulation VIII, the Project

would result in a less than cumulatively considerable net increase in emissions during construction. In addition, all other cumulative projects are required to comply with Regulation VIII and would also be assumed to implement mitigation measures to reduce their individual construction air quality emissions. In this way, each individual project would reduce construction emissions on a project-by-project basis resulting in less than cumulatively considerable contributions to existing criteria pollutants.

As discussed under Threshold 1, the Project would be consistent with Imperial County APCD air quality plans, which address how the region would cumulatively achieve emission standards. Implementation of MM-AIR-3 would ensure that fugitive dust emissions would be controlled during project operation. As shown in Table 9, all operation-related emissions would be less than the applicable significance thresholds.

Since the Project would not conflict with implementation of Imperial County APCD air quality plans and operational emissions would be less than the applicable project-level significance thresholds, the Project would not result in a cumulatively considerable net increase in criteria pollutants for which the region is in non-attainment of federal or state standards, and cumulative impacts would be less than significant.

3. *Would the project expose sensitive receptors to substantial pollutant concentration including air toxics such as diesel particulates?*

The term "sensitive receptor" refers to a person in the population who is more susceptible to health effects due to exposure to an air contaminant than the population at large or to a land use that may reasonably be associated with such a person. Examples include schools, day care centers, hospitals, retirement homes, convalescence facilities, and residences. The Project site is in a rural environment; there are no nearby schools, day care centers, hospitals, retirement homes, or convalescence facilities. The Project site is bounded by Westside Main Canal to the north, BLM lands to the south and west, vacant land to the east, and the Campo Verde solar generation facility to the northwest. The Imperial Valley Substation is located approximately 0.5 mile south of the southern property line of the site. There are no sensitive receptors in the immediate vicinity of the Project site. The closest sensitive receptor is a single-family residence located approximately 4,000 feet northeast of the Project site at the intersection of Wixom Road and Vogel Road.

Construction-related Diesel Particulate Matter

Construction of the Project would result in short-term diesel exhaust emissions from on-site heavy-duty equipment. Particulate exhaust emissions from diesel-fueled engines (diesel PM or DPM) were identified as a TAC by CARB in 1998. Project construction would result in the generation of DPM emissions from the use of off-road diesel construction equipment during site preparation and facility installation. Other lesser construction-related sources of DPM include material delivery trucks.

Compared to typical construction projects, construction of solar generation facilities involves fewer pieces of heavy-duty diesel construction equipment which operate over larger areas; thus, construction equipment is rarely proximate to any specific receptor for an extended period of time. Due to the limited duration of construction and the distance to the nearest

sensitive receptor (4,000 feet), DPM generated by Project construction activities is not expected to create conditions where the incremental cancer risk exceeds the Imperial County APCD's ten in one million significance threshold. Therefore, Project construction would not expose sensitive receptors to a substantial pollutant concentration, and localized air quality impacts from construction-related DPM emissions would be less than significant.

On-site Operation Sources

As discussed under Threshold 2, construction- and operation-related emissions would be less than the applicable significance thresholds. Solar generation facilities have been shown to emit insignificant air toxic emissions. Localized air quality impacts from Project operations would be less than significant.

Off-site Operation Sources – CO Hot Spots

Localized CO concentration is a direct function of motor vehicle activity at signalized intersections (e.g., idling time and traffic flow conditions), particularly during peak commute hours and meteorological conditions. Under specific meteorological conditions (e.g., stable conditions that result in poor dispersion), CO concentrations may reach unhealthy levels with respect to local sensitive land uses. CO hot spots due to traffic almost exclusively occur at signalized intersections that operate at a Level of Service (LOS) E or below. Projects may result in or contribute to a CO hot spot if they worsen traffic flow at signalized intersections operating at LOS E or F.

The Project site is in a rural environment with no signalized traffic intersections within several miles of the Project site. As discussed in Section 5.2.1, Project operations would generate up to 40 trips per day.

The Project is not in proximity to a signalized intersection and would not generate substantial traffic. Therefore, the Project would not cause or contribute to a CO hot spot. Impacts would be less than significant.

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

The potential for an odor impact is dependent on a number of variables including the nature of the odor source, distance between the receptor and odor source, and local meteorological conditions. Project construction would result in the emission of diesel fumes and other odors typically associated with construction activities. Odors are highest near the source and would quickly dissipate off the site. The nearest sensitive receptor is a single-family residence approximately 4,000 feet from the Project site. Any odors associated with construction activities would be transient and would cease upon completion. Therefore, Project construction would not generate odors adversely affecting a substantial number of people, and impacts would be less than significant.

Energy storage facilities are not known to emit odors during operation. Project operation would include inspection, maintenance, and washing activities. These processes are not

known to emit odors. Therefore, operational impacts related to odor would also be less than significant.

5.4 Cumulative Impact Analysis

The geographic scope of cumulative impacts for air quality would be the jurisdictional boundaries of the Imperial County APCD, who are responsible for regulating air quality and preparing and implementing the portion of the California SIP applicable to the portion of the Salton Sea Air Basin that is in Imperial County. The scopes of the applicable Imperial County APCD air quality plans cover the entirety of Imperial County and address how the region would cumulatively achieve emission standards. Therefore, an evaluation of consistency with these plans constitutes an impact analysis that is cumulative in nature. As described under Section 5.3 above, the primary concern for assessing consistency with air quality plans is whether the Project would induce growth that would result in a net increase in criteria pollutant emissions that exceeds the assumptions used to develop the plan. The existing land use designation for the Project site of Agriculture (A3) would generate approximately 296 daily trips per day as an agricultural use. Project operations would generate up to 40 trips per day, which would be less than the 296 daily trips that would be generated by the Project site as an agricultural use. Therefore, mobile source emissions associated with the Project would be less than what is accounted for in the Imperial County APCD air quality plans that originally considered the Project site as an agricultural use. Furthermore, the Project would not construct housing or other uses that would result in regional population growth beyond what was originally anticipated in SCAG's growth projections for Imperial County. Additionally, as summarized in Table 9, operation of the Project would result in emissions that are well below all applicable Imperial County APCD project-level significance thresholds. Therefore, operational Project emissions would be consistent with Imperial County APCD regional criteria pollutant emission projections and SCAG regional growth projections for Imperial County, and cumulative impacts would be less than significant.

Construction of the Project, along with construction of other cumulative projects within Imperial County, would be short term and temporary in nature. As shown in Tables 7 and 8 above, all construction-related emissions would be less than the applicable Imperial County APCD significance thresholds. Since the Project's construction emissions would be less than the project-level significance thresholds and would comply with all Imperial County APCD measures including Regulation VIII, the Project would result in a less than cumulatively considerable net increase in emissions during construction. In addition, all other cumulative projects are required to comply with Regulation VIII and would also be assumed to implement mitigation measures to reduce their individual construction air quality emissions. In this way, each individual project would reduce construction emissions on a project-by-project basis resulting in less than cumulatively considerable contributions to existing criteria pollutants. Furthermore, it is unlikely construction activities would overlap or result in a proximate concentration of emissions due to the varied schedules and distances between cumulative projects within Imperial County. Therefore, cumulative impacts related to project construction would be less than significant.

6.0 Conclusions and Recommendations

This report evaluates the significance of air quality emissions associated with the Project using criteria from the California Natural Resources Agency State CEQA Guidelines and the Imperial County APCD CEQA Air Quality Handbook.

A significant air quality impact would occur if the Project would conflict with the Imperial County APCD's ozone and particulate matter air quality plans. Project air pollutant emissions would be consistent with regional growth projections and the air quality plan emission forecasts, and impacts would be less than significant.

A significant air quality impact would occur if the Project would result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is a non-attainment area. As calculated in this analysis, construction- and operation-related emissions would be less than all applicable significance thresholds provided mitigation measures MM-AIR-1, MM-AIR-2, and MM-AIR-3 are implemented. The Project site is in non-attainment areas for ozone, PM_{10}, and $PM_{2.5}$ standards. Project ozone precursor and particulate matter emissions would be less than applicable significance thresholds. Thus, the Project would not result in a cumulatively considerable net increase of ozone precursors or particulate matter emissions, and impacts would be less than significant.

A significant air quality impact would occur if the Project would expose sensitive receptors to substantial pollutant concentration including air toxics. There are no sensitive receptors in the immediate vicinity of the Project site. The closest sensitive receptor is a single-family residence located approximately 4,000 feet northeast of the Project site at the intersection of Wixom Road and Vogel Road. The Project would result in the generation of DPM during construction and mobile-source CO during operation. Due to the limited duration of construction and the distance to the nearest sensitive receptor, DPM generated by Project construction activities is not expected to create conditions where the incremental cancer risk exceeds the Imperial County APCD's ten in one million significance threshold; thus, impacts from DPM exposure would be less than significant. Due to the limited traffic generated by the Project, the Project would not substantially contribute to elevated CO concentrations; impacts from mobile-source CO emissions would be less than significant. The various components of solar generation facilities, including storage and transmission facilities, have been shown to emit insignificant air toxic emissions. Localized air quality impacts from Project operations would be less than significant.

Project construction would result in temporary odors associated with diesel exhaust. Odors generated from construction would be temporary and intermittent, and would largely dissipate at short distances from the source. The various components of solar generation facilities, including storage and transmission facilities, are not known to emit odors during operation. Thus, the Project would not create objectionable odors adversely affecting a substantial number of people and impacts would be less than significant.

The Project would have a less than significant impact on air quality. Mitigation measures MM-AIR-1, MM-AIR-2, and MM-AIR-3 would be required along with the standard Imperial County APCD dust and equipment measures discussed in Sections 5.1.1 and 5.1.2 is required.

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ATTACHMENTS

ATTACHMENT 1

Mobilization Fugitive Dust Calculations

AP-42 - Construction Equipment Mobilization - Unpaved Road Dust Emissions

$E = k \times (s/12)^a \times (W/3)^b \div (M/0.2)^c$

		Truck Loaded with Equipment	Truck without Equipment	
E =	emission factor (lbs/VMT)			
s =	surface material silt content (%)	6.4	6.4	% gravel silt content
W =	mean vehicle weight (tons)	35	17.5	tons
M =	surface material moisture content (%)	0.5	0.5	% unpaved road moisture content

Empirical Constant	PM2.5	PM10
k	0.38	2.6
a	0.8	0.8
b	0.4	0.4
c	0.3	0.3

E10 =	3.19	2.42	lbs/VMT
E2.5 =	0.47	0.35	lbs/VMT
# Trips	56	56	
Distance	4.4	4.4	miles
VMT	246.4	246.4	miles
PM10	786	596	lbs
PM2.5	115	87	lbs

	Total Uncontrolled (lbs)	Water Emission Reduction (%)	Soil Stabilizer Reduction (%)
PM10	1382	61%	84%
PM2.5	202	61%	84%

	Uncontrolled		Water Controlled (61%)		Soil Stabilizer Controlled (84%)	
Round Trips	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
1	25	4	10	1	4	1
2	49	7	19	3	8	1
3	74	11	29	4	12	2
4	99	14	39	6	16	2
5	123	18	48	7	20	3
6	148	22	58	8	24	3

ATTACHMENT 2

CalEEMod Output Files

		ROG	Nox	CO	Sox	PM10	PM2.5
Access Road							
	Fugitive Dust (calculated separately)	0	0	0	0	144	21
	Construction Equipment	0	5	6	0	0	0
	Equipment Delivery Trucks	0	2	1	0	0	0
	Worker Trips	0	0	1	0	0	0
	Total	0	7	7	0	144	21
	Threshold	*75*	*100*	*550*		*150*	
Phase 1	Construction Equipment						
	Bridge	*0*	*9*	*11*	*0*	*0*	*0*
	Substation	*1*	*20*	*24*	*0*	*1*	*1*
	Battery Storage 1	*2*	*41*	*49*	*0*	*2*	*2*
	Architectural Coatings	*0*	*2*	*2*	*0*	*0*	*0*
	Construction Equipment Subtotal	4	71	86	0	3	3
	Fugitive Dust (Grading)	0	0	0	0	0	0
	Material Delivery	0	9	3	0	48	5
	Worker Trips	5	4	30	0	48	6
	Architectural Coatings	14	0	0	0	0	0
	Total	22	84	119	0	100	14
	Threshold	*75*	*100*	*550*		*150*	
Phase 2-5	Construction Equipment	2	41	49	0	2	2
	Material Delivery	0	8	2	0	7	1
	Worker Trips	4	4	28	0	48	6
	Total	7	52	79	0	58	9
	Threshold	*75*	*100*	*550*		*150*	

8888 Westside Canal Energy Center

Imperial County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	5.00	1000sqft	1.00	5,000.00	0
Unrefrigerated Warehouse-No Rail	500.00	1000sqft	147.00	500,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	12
Climate Zone	15			**Operational Year**	2022
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	956.99	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy intensity factors reduced to reflect RPS 2020 mandate
(956.99, 0.022, 0.005)

Land Use - 5,000 sf O&M Building
500,000 sf storage warehouses
148 acres

Construction Phase - Construction schedule per applicant

Off-road Equipment - Project equipment list

Off-road Equipment - Project equipment list

Off-road Equipment - Project equipment list

Off-road Equipment - Project equipment list

Off-road Equipment - Project equipment list
Off-road Equipment - Construciton equipment list

Off-road Equipment - Project equipment list

Trips and VMT - Max 200 workers, 30 deliveries
Trip length increased to 20 miles

On-road Fugitive Dust - Workers - last 0.3 miles of 20 mile trip would be dirt road (98.5% paved)
Materials - 4.4 miles of 20 miles trip over service road (78% paved or construction mats)
Service road silt content = 4.3%
Access road dust emissions calculated separately

Grading - 148 acres

Vehicle Trips - 20 full time employees

Road Dust - Workers - last 0.3 miles of 20 mile trip would be gravel (98.5% paved)

Energy Use - No storage warehouse heating
Warehouse lighting included in aux load calculations

Water And Wastewater - 10,000 gallons per day (3,650,000 per year)
1,000,000 stored for fire protection

Construction Off-road Equipment Mitigation - Tier 3 engines per CARB regulations
Water exposed grading areas
Water unpaved roads (61% reduction due to water applied rather than soil stabilizer reduction of 84%)

Operational Off-Road Equipment -

Stationary Sources - Emergency Generators and Fire Pumps -

Architectural Coating - O&M Building only

Solid Waste - No additional solid waste generated by storage warehouses

Area Coating -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	152,500.00	2,500.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	457,500.00	7,500.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
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tblConstructionPhase	NumDays	220.00	5.00

tblConstructionPhase	NumDays	3,100.00	434.00
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tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	0.37	0.00
tblEnergyUse	T24NG	2.00	0.00
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tblGrading	AcresOfGrading	12.50	3.00
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tblOnRoadDust	VendorPercentPave	50.00	98.50
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tblOnRoadDust	WorkerPercentPave	50.00	98.50
tblOnRoadDust	WorkerPercentPave	50.00	98.50
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tblOnRoadDust	WorkerPercentPave	50.00	98.50
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	1270.9	956.99

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tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblRoadDust	RoadPercentPave	50	98.5
tblSolidWaste	SolidWasteGenerationRate	282.00	0.00
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tblWater	IndoorWaterUseRate	69,375,000.00	0.00
tblWater	OutdoorWaterUseRate	0.00	1,000,000.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	27.1905	107.8890	95.0619	0.2255	182.5519	4.3551	186.9070	19.3166	4.0079	23.3245	0.0000	22,224.8687	22,224.8687	4.8523	0.0000	22,346.1748
2022	9.4463	62.6228	65.9437	0.1658	69.9728	2.2787	72.2515	8.1540	2.0975	10.2515	0.0000	16,446.1770	16,446.1770	3.0154	0.0000	16,521.5623
2023	8.7385	54.1154	62.3146	0.1633	69.9728	1.9741	71.9470	8.1540	1.8166	9.9706	0.0000	16,195.4373	16,195.4373	2.9613	0.0000	16,269.4701
Maximum	**27.1905**	**107.8890**	**95.0619**	**0.2255**	**182.5519**	**4.3551**	**186.9070**	**19.3166**	**4.0079**	**23.3245**	**0.0000**	**22,224.8687**	**22,224.8687**	**4.8523**	**0.0000**	**22,346.1748**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	21.8977	82.3530	116.2157	0.2255	75.4284	3.3429	78.7713	8.6743	3.3387	12.0130	0.0000	22,224.8687	22,224.8687	4.8523	0.0000	22,346.1748
2022	6.6122	52.3865	78.7841	0.1658	31.6217	1.9248	33.5466	4.3453	1.9209	6.2662	0.0000	16,446.1770	16,446.1770	3.0154	0.0000	16,521.5623
2023	6.3009	49.3616	76.1836	0.1633	31.6217	1.9064	33.5281	4.3453	1.9033	6.2486	0.0000	16,195.4373	16,195.4373	2.9613	0.0000	16,269.4701
Maximum	**21.8977**	**82.3530**	**116.2157**	**0.2255**	**75.4284**	**3.3429**	**78.7713**	**8.6743**	**3.3387**	**12.0130**	**0.0000**	**22,224.8687**	**22,224.8687**	**4.8523**	**0.0000**	**22,346.1748**

8888 Westside Canal Energy Center - Imperial County APCD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**23.28**	**18.04**	**-21.43**	**0.00**	**57.00**	**16.66**	**55.95**	**51.26**	**9.58**	**43.67**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.9737	4.7000e-004	0.0516	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1105	0.1105	2.9000e-004		0.1178
Energy	4.8000e-003	0.0436	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003		52.3610	52.3610	1.0000e-003	9.6000e-004	52.6722
Mobile	0.8396	7.2527	13.2769	0.0421	47.7479	0.0310	47.7789	5.2769	0.0292	5.3062		4,290.0992	4,290.0992	0.2383		4,296.0574
Total	**12.8181**	**7.2968**	**13.3652**	**0.0423**	**47.7479**	**0.0345**	**47.7824**	**5.2769**	**0.0327**	**5.3097**		**4,342.5707**	**4,342.5707**	**0.2396**	**9.6000e-004**	**4,348.8474**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.9737	4.7000e-004	0.0516	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1105	0.1105	2.9000e-004		0.1178
Energy	4.8000e-003	0.0436	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003		52.3610	52.3610	1.0000e-003	9.6000e-004	52.6722
Mobile	0.8396	7.2527	13.2769	0.0421	47.7479	0.0310	47.7789	5.2769	0.0292	5.3062		4,290.0992	4,290.0992	0.2383		4,296.0574
Total	**12.8181**	**7.2968**	**13.3652**	**0.0423**	**47.7479**	**0.0345**	**47.7824**	**5.2769**	**0.0327**	**5.3097**		**4,342.5707**	**4,342.5707**	**0.2396**	**9.6000e-004**	**4,348.8474**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Common Facilities - Acess Road	Site Preparation	1/4/2021	2/5/2021	5	25	
2	Common Facilities - Substation	Grading	2/8/2021	12/31/2021	5	235	
3	Common Facilities - Bridge Construction	Building Construction	2/8/2021	8/6/2021	5	130	
4	Battery Storage 1	Building Construction	2/8/2021	12/31/2021	5	235	
5	O&M Building - Architectural Coating	Architectural Coating	12/27/2021	12/31/2021	5	5	
6	Battery Storage 2-5	Building Construction	1/3/2022	8/31/2023	5	434	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 7,500; Non-Residential Outdoor: 2,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Common Facilities - Acess Road	Graders	1	8.00	187	0.41
Common Facilities - Acess Road	Rubber Tired Dozers	0	8.00	247	0.40
Common Facilities - Acess Road	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Common Facilities - Substation	Bore/Drill Rigs	0	8.00	221	0.50

Common Facilities - Substation	Cranes	3	8.00	231	0.29
Common Facilities - Substation	Excavators	0	8.00	158	0.38
Common Facilities - Substation	Forklifts	1	8.00	89	0.20
Common Facilities - Substation	Graders	0	8.00	187	0.41
Common Facilities - Substation	Off-Highway Trucks	1	8.00	402	0.38
Common Facilities - Substation	Rollers	1	8.00	80	0.38
Common Facilities - Substation	Rubber Tired Dozers	0	8.00	247	0.40
Common Facilities - Substation	Scrapers	0	8.00	367	0.48
Common Facilities - Substation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Common Facilities - Bridge Construction	Bore/Drill Rigs	1	8.00	221	0.50
Common Facilities - Bridge Construction	Cranes	0	7.00	231	0.29
Common Facilities - Bridge Construction	Forklifts	1	8.00	89	0.20
Common Facilities - Bridge Construction	Rollers	1	8.00	80	0.38
Common Facilities - Bridge Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Common Facilities - Bridge Construction	Welders	0	8.00	46	0.45
Battery Storage 1	Cranes	3	8.00	231	0.29
Battery Storage 1	Excavators	1	8.00	158	0.38
Battery Storage 1	Forklifts	1	8.00	89	0.20
Battery Storage 1	Generator Sets	0	8.00	84	0.74
Battery Storage 1	Graders	1	8.00	187	0.41
Battery Storage 1	Off-Highway Trucks	1	8.00	402	0.38
Battery Storage 1	Pumps	0	8.00	84	0.74
Battery Storage 1	Rollers	1	8.00	80	0.38
Battery Storage 1	Rubber Tired Dozers	1	8.00	247	0.40
Battery Storage 1	Scrapers	1	8.00	367	0.48
Battery Storage 1	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Battery Storage 1	Welders	0	8.00	46	0.45
O&M Building - Architectural Coating	Air Compressors	1	8.00	78	0.48
Battery Storage 2-5	Cranes	3	8.00	231	0.29
Battery Storage 2-5	Excavators	1	8.00	158	0.38
Battery Storage 2-5	Forklifts	1	8.00	89	0.20
Battery Storage 2-5	Generator Sets	0	8.00	84	0.74
Battery Storage 2-5	Graders	1	8.00	187	0.41
Battery Storage 2-5	Off-Highway Trucks	1	8.00	402	0.38
Battery Storage 2-5	Pumps	0	8.00	84	0.74
Battery Storage 2-5	Rollers	1	8.00	80	0.38
Battery Storage 2-5	Rubber Tired Dozers	1	8.00	247	0.40
Battery Storage 2-5	Scrapers	1	8.00	367	0.48
Battery Storage 2-5	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Battery Storage 2-5	Welders	0	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Common Facilities - Acess Road	2	10.00	12.00	0.00	20.00	20.00	20.00	LD_Mix	HDT_Mix	HHDT
Common Facilities - Substation	8	0.00	0.00	0.00	20.00	20.00	20.00	LD_Mix	HDT_Mix	HHDT
Common Facilities - Bridge Construction	4	0.00	0.00	0.00	20.00	20.00	20.00	LD_Mix	HDT_Mix	HHDT
Battery Storage 1	14	400.00	60.00	0.00	20.00	20.00	20.00	LD_Mix	HDT_Mix	HHDT
O&M Building - Architectural Coating	1	0.00	0.00	0.00	20.00	20.00	20.00	LD_Mix	HDT_Mix	HHDT
Battery Storage 2-5	14	400.00	60.00	0.00	20.00	20.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Common Facilities - Acess Road - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1273	0.0000	0.1273	0.0137	0.0000	0.0137			0.0000			0.0000
Off-Road	0.6403	7.8204	4.0274	9.7300e-003		0.2995	0.2995		0.2755	0.2755		942.5842	942.5842	0.3049		950.2055
Total	**0.6403**	**7.8204**	**4.0274**	**9.7300e-003**	**0.1273**	**0.2995**	**0.4267**	**0.0137**	**0.2755**	**0.2893**		**942.5842**	**942.5842**	**0.3049**		**950.2055**

3.2 Common Facilities - Acess Road - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0752	1.7705	0.5260	7.2200e-003	0.2224	6.7100e-003	0.2291	0.0640	6.4100e-003	0.0704		754.9677	754.9677	0.0245		755.5801
Worker	0.1127	0.1015	0.7551	1.2300e-003	0.1520	8.8000e-004	0.1529	0.0403	8.1000e-004	0.0411		121.9673	121.9673	8.5100e-003		122.1801
Total	**0.1880**	**1.8720**	**1.2811**	**8.4500e-003**	**0.3744**	**7.5900e-003**	**0.3820**	**0.1043**	**7.2200e-003**	**0.1115**		**876.9349**	**876.9349**	**0.0330**		**877.7602**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0496	0.0000	0.0496	5.3600e-003	0.0000	5.3600e-003			0.0000			0.0000
Off-Road	0.2382	4.8716	5.8579	9.7300e-003		0.2405	0.2405		0.2405	0.2405	0.0000	942.5842	942.5842	0.3049		950.2055
Total	**0.2382**	**4.8716**	**5.8579**	**9.7300e-003**	**0.0496**	**0.2405**	**0.2902**	**5.3600e-003**	**0.2405**	**0.2459**	**0.0000**	**942.5842**	**942.5842**	**0.3049**		**950.2055**

3.2 Common Facilities - Acess Road - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0752	1.7705	0.5260	7.2200e-003	0.2224	6.7100e-003	0.2291	0.0640	6.4100e-003	0.0704		754.9677	754.9677	0.0245		755.5801
Worker	0.1127	0.1015	0.7551	1.2300e-003	0.1520	8.8000e-004	0.1529	0.0403	8.1000e-004	0.0411		121.9673	121.9673	8.5100e-003		122.1801
Total	**0.1880**	**1.8720**	**1.2811**	**8.4500e-003**	**0.3744**	**7.5900e-003**	**0.3820**	**0.1043**	**7.2200e-003**	**0.1115**		**876.9349**	**876.9349**	**0.0330**		**877.7602**

3.3 Common Facilities - Substation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6679	0.0000	0.6679	0.0721	0.0000	0.0721			0.0000			0.0000
Off-Road	2.5380	26.7064	17.1216	0.0409		1.2086	1.2086		1.1119	1.1119		3,958.6592	3,958.6592	1.2803		3,990.6669
Total	**2.5380**	**26.7064**	**17.1216**	**0.0409**	**0.6679**	**1.2086**	**1.8765**	**0.0721**	**1.1119**	**1.1840**		**3,958.6592**	**3,958.6592**	**1.2803**		**3,990.6669**

3.3 Common Facilities - Substation - 2021

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2605	0.0000	0.2605	0.0281	0.0000	0.0281			0.0000			0.0000
Off-Road	1.0026	20.2719	24.0502	0.0409		0.9553	0.9553		0.9553	0.9553	0.0000	3,958.6592	3,958.6592	1.2803		3,990.6669
Total	**1.0026**	**20.2719**	**24.0502**	**0.0409**	**0.2605**	**0.9553**	**1.2158**	**0.0281**	**0.9553**	**0.9834**	**0.0000**	**3,958.6592**	**3,958.6592**	**1.2803**		**3,990.6669**

3.3 Common Facilities - Substation - 2021

Mitigated Construction Off-Site

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

3.4 Common Facilities - Bridge Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7643	8.0219	7.3825	0.0167		0.4047	0.4047		0.3724	0.3724		1,615.0822	1,615.0822	0.5224		1,628.1410
Total	**0.7643**	**8.0219**	**7.3825**	**0.0167**		**0.4047**	**0.4047**		**0.3724**	**0.3724**		**1,615.0822**	**1,615.0822**	**0.5224**		**1,628.1410**

3.4 Common Facilities - Bridge Construction - 2021

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4118	8.5851	10.5546	0.0167		0.4563	0.4563		0.4563	0.4563	0.0000	1,615.0822	1,615.0822	0.5224		1,628.1410
Total	**0.4118**	**8.5851**	**10.5546**	**0.0167**		**0.4563**	**0.4563**		**0.4563**	**0.4563**	**0.0000**	**1,615.0822**	**1,615.0822**	**0.5224**		**1,628.1410**

3.4 Common Facilities - Bridge Construction - 2021

Mitigated Construction Off-Site

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

3.5 Battery Storage 1 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.5705	60.2500	37.7236	0.0826		2.6731	2.6731		2.4593	2.4593		7,997.5991	7,997.5991	2.5866		8,062.2637
Total	**5.5705**	**60.2500**	**37.7236**	**0.0826**		**2.6731**	**2.6731**		**2.4593**	**2.4593**		**7,997.5991**	**7,997.5991**	**2.5866**		**8,062.2637**

3.5 Battery Storage 1 - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3761	8.8526	2.6301	0.0361	121.2116	0.0335	121.2451	12.2218	0.0321	12.2539		3,774.8383	3,774.8383	0.1225		3,777.9005
Worker	4.5090	4.0580	30.2041	0.0492	60.6725	0.0351	60.7076	7.0227	0.0323	7.0550		4,878.6900	4,878.6900	0.3405		4,887.2027
Total	**4.8851**	**12.9106**	**32.8342**	**0.0853**	**181.8840**	**0.0686**	**181.9526**	**19.2445**	**0.0644**	**19.3089**		**8,653.5283**	**8,653.5283**	**0.4630**		**8,665.1032**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0258	40.5854	48.7768	0.0826		1.8627	1.8627		1.8627	1.8627	0.0000	7,997.5991	7,997.5991	2.5866		8,062.2637
Total	**2.0258**	**40.5854**	**48.7768**	**0.0826**		**1.8627**	**1.8627**		**1.8627**	**1.8627**	**0.0000**	**7,997.5991**	**7,997.5991**	**2.5866**		**8,062.2637**

3.5 Battery Storage 1 - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3761	8.8526	2.6301	0.0361	47.8442	0.0335	47.8778	4.9355	0.0321	4.9676		3,774.8383	3,774.8383	0.1225		3,777.9005
Worker	4.5090	4.0580	30.2041	0.0492	27.3237	0.0351	27.3588	3.7107	0.0323	3.7430		4,878.6900	4,878.6900	0.3405		4,887.2027
Total	**4.8851**	**12.9106**	**32.8342**	**0.0853**	**75.1679**	**0.0686**	**75.2365**	**8.6462**	**0.0644**	**8.7106**		**8,653.5283**	**8,653.5283**	**0.4630**		**8,665.1032**

3.6 O&M Building - Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.9050					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2919	2.0358	2.4234	3.9600e-003		0.1255	0.1255		0.1255	0.1255		375.2641	375.2641	0.0258		375.9079
Total	**14.1969**	**2.0358**	**2.4234**	**3.9600e-003**		**0.1255**	**0.1255**		**0.1255**	**0.1255**		**375.2641**	**375.2641**	**0.0258**		**375.9079**

3.6 O&M Building - Architectural Coating - 2021

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.9050					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0792	1.8093	2.4432	3.9600e-003		0.1268	0.1268		0.1268	0.1268	0.0000	375.2641	375.2641	0.0258		375.9079
Total	**13.9842**	**1.8093**	**2.4432**	**3.9600e-003**		**0.1268**	**0.1268**		**0.1268**	**0.1268**	**0.0000**	**375.2641**	**375.2641**	**0.0258**		**375.9079**

3.6 O&M Building - Architectural Coating - 2021

Mitigated Construction Off-Site

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

3.7 Battery Storage 2-5 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.8598	50.8216	35.9363	0.0826		2.2166	2.2166		2.0393	2.0393		8,001.1903	8,001.1903	2.5878		8,065.8839
Total	**4.8598**	**50.8216**	**35.9363**	**0.0826**		**2.2166**	**2.2166**		**2.0393**	**2.0393**		**8,001.1903**	**8,001.1903**	**2.5878**		**8,065.8839**

3.7 Battery Storage 2-5 - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3490	8.0811	2.3893	0.0358	9.3004	0.0286	9.3289	1.1314	0.0273	1.1587		3,744.6329	3,744.6329	0.1154		3,747.5185
Worker	4.2374	3.7200	27.6181	0.0474	60.6725	0.0336	60.7060	7.0227	0.0309	7.0536		4,700.3539	4,700.3539	0.3122		4,708.1599
Total	**4.5864**	**11.8012**	**30.0074**	**0.0832**	**69.9728**	**0.0621**	**70.0350**	**8.1540**	**0.0582**	**8.2123**		**8,444.9868**	**8,444.9868**	**0.4277**		**8,455.6784**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0258	40.5854	48.7768	0.0826		1.8627	1.8627		1.8627	1.8627	0.0000	8,001.1903	8,001.1903	2.5878		8,065.8839
Total	**2.0258**	**40.5854**	**48.7768**	**0.0826**		**1.8627**	**1.8627**		**1.8627**	**1.8627**	**0.0000**	**8,001.1903**	**8,001.1903**	**2.5878**		**8,065.8839**

3.7 Battery Storage 2-5 - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3490	8.0811	2.3893	0.0358	4.2981	0.0286	4.3266	0.6346	0.0273	0.6619		3,744.6329	3,744.6329	0.1154		3,747.5185
Worker	4.2374	3.7200	27.6181	0.0474	27.3237	0.0336	27.3572	3.7107	0.0309	3.7416		4,700.3539	4,700.3539	0.3122		4,708.1599
Total	**4.5864**	**11.8012**	**30.0074**	**0.0832**	**31.6217**	**0.0621**	**31.6838**	**4.3453**	**0.0582**	**4.4035**		**8,444.9868**	**8,444.9868**	**0.4277**		**8,455.6784**

3.7 Battery Storage 2-5 - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.4634	45.3392	34.9078	0.0827		1.9304	1.9304		1.7760	1.7760		8,002.8810	8,002.8810	2.5883		8,067.5884
Total	**4.4634**	**45.3392**	**34.9078**	**0.0827**		**1.9304**	**1.9304**		**1.7760**	**1.7760**		**8,002.8810**	**8,002.8810**	**2.5883**		**8,067.5884**

3.7 Battery Storage 2-5 - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2825	5.3505	2.0514	0.0351	9.3004	0.0114	9.3118	1.1314	0.0109	1.1423		3,670.6799	3,670.6799	0.0856		3,672.8211
Worker	3.9926	3.4257	25.3555	0.0456	60.6725	0.0322	60.7047	7.0227	0.0297	7.0524		4,521.8763	4,521.8763	0.2874		4,529.0607
Total	**4.2751**	**8.7762**	**27.4068**	**0.0807**	**69.9728**	**0.0437**	**70.0165**	**8.1540**	**0.0406**	**8.1946**		**8,192.5563**	**8,192.5563**	**0.3730**		**8,201.8818**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0258	40.5854	48.7768	0.0827		1.8627	1.8627		1.8627	1.8627	0.0000	8,002.8810	8,002.8810	2.5883		8,067.5884
Total	**2.0258**	**40.5854**	**48.7768**	**0.0827**		**1.8627**	**1.8627**		**1.8627**	**1.8627**	**0.0000**	**8,002.8810**	**8,002.8810**	**2.5883**		**8,067.5884**

3.7 Battery Storage 2-5 - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2825	5.3505	2.0514	0.0351	4.2981	0.0114	4.3095	0.6346	0.0109	0.6455		3,670.6799	3,670.6799	0.0856		3,672.8211
Worker	3.9926	3.4257	25.3555	0.0456	27.3237	0.0322	27.3559	3.7107	0.0297	3.7404		4,521.8763	4,521.8763	0.2874		4,529.0607
Total	**4.2751**	**8.7762**	**27.4068**	**0.0807**	**31.6217**	**0.0437**	**31.6654**	**4.3453**	**0.0406**	**4.3859**		**8,192.5563**	**8,192.5563**	**0.3730**		**8,201.8818**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.8396	7.2527	13.2769	0.0421	47.7479	0.0310	47.7789	5.2769	0.0292	5.3062		4,290.0992	4,290.0992	0.2383		4,296.0574
Unmitigated	0.8396	7.2527	13.2769	0.0421	47.7479	0.0310	47.7789	5.2769	0.0292	5.3062		4,290.0992	4,290.0992	0.2383		4,296.0574

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	200.00	200.00	200.00	1,456,000	1,456,000
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	200.00	200.00	200.00	1,456,000	1,456,000

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	20.00	20.00	20.00	59.00	28.00	13.00	100	0	0
Unrefrigerated Warehouse-No	0.00	0.00	0.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.514862	0.031726	0.160627	0.119887	0.016529	0.004969	0.019101	0.120993	0.003465	0.001214	0.005236	0.000734	0.000658
Unrefrigerated Warehouse-No Rail	0.514862	0.031726	0.160627	0.119887	0.016529	0.004969	0.019101	0.120993	0.003465	0.001214	0.005236	0.000734	0.000658

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	4.8000e-003	0.0436	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003		52.3610	52.3610	1.0000e-003	9.6000e-004	52.6722
NaturalGas Unmitigated	4.8000e-003	0.0436	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003		52.3610	52.3610	1.0000e-003	9.6000e-004	52.6722

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	445.068	4.8000e-003	0.0436	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003		52.3610	52.3610	1.0000e-003	9.6000e-004	52.6722
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.8000e-003**	**0.0436**	**0.0367**	**2.6000e-004**		**3.3200e-003**	**3.3200e-003**		**3.3200e-003**	**3.3200e-003**		**52.3610**	**52.3610**	**1.0000e-003**	**9.6000e-004**	**52.6722**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.445068	4.8000e-003	0.0436	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003		52.3610	52.3610	1.0000e-003	9.6000e-004	52.6722
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.8000e-003**	**0.0436**	**0.0367**	**2.6000e-004**		**3.3200e-003**	**3.3200e-003**		**3.3200e-003**	**3.3200e-003**		**52.3610**	**52.3610**	**1.0000e-003**	**9.6000e-004**	**52.6722**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.9737	4.7000e-004	0.0516	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1105	0.1105	2.9000e-004		0.1178
Unmitigated	11.9737	4.7000e-004	0.0516	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1105	0.1105	2.9000e-004		0.1178

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.1619					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.8070					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8000e-003	4.7000e-004	0.0516	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1105	0.1105	2.9000e-004		0.1178
Total	**11.9737**	**4.7000e-004**	**0.0516**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1105**	**0.1105**	**2.9000e-004**		**0.1178**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.1619					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.8070					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8000e-003	4.7000e-004	0.0516	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1105	0.1105	2.9000e-004		0.1178
Total	**11.9737**	**4.7000e-004**	**0.0516**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1105**	**0.1105**	**2.9000e-004**		**0.1178**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

8888 Westside Canal Energy Center

Imperial County APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	5.00	1000sqft	1.00	5,000.00	0
Unrefrigerated Warehouse-No Rail	500.00	1000sqft	147.00	500,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	12
Climate Zone	15			**Operational Year**	2022
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	956.99	**CH4 Intensity (lb/MWhr)**	0.022	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Energy intensity factors reduced to reflect RPS 2020 mandate (956.99, 0.022, 0.005)

Land Use - 5,000 sf O&M Building
500,000 sf storage warehouses
148 acres

Construction Phase - Construction schedule per applicant

Off-road Equipment - Project equipment list

Off-road Equipment - Project equipment list

Off-road Equipment - Project equipment list

Off-road Equipment - Project equipment list

Off-road Equipment - Project equipment list
Off-road Equipment - Construciton equipment list

Off-road Equipment - Project equipment list

Trips and VMT - Max 200 workers, 30 deliveries
Trip length increased to 20 miles

On-road Fugitive Dust - Workers - last 0.3 miles of 20 mile trip would be dirt road (98.5% paved)
Materials - 4.4 miles of 20 miles trip over service road (78% paved or construction mats)
Service road silt content = 4.3%
Access road dust emissions calculated separately

Grading - 148 acres

Vehicle Trips - 20 full time employees

Road Dust - Workers - last 0.3 miles of 20 mile trip would be gravel (98.5% paved)

Energy Use - No storage warehouse heating
Warehouse lighting included in aux load calculations

Water And Wastewater - 10,000 gallons per day (3,650,000 per year)
1,000,000 stored for fire protection

Construction Off-road Equipment Mitigation - Tier 3 engines per CARB regulations
Water exposed grading areas
Water unpaved roads (61% reduction due to water applied rather than soil stabilizer reduction of 84%)

Operational Off-Road Equipment -

Stationary Sources - Emergency Generators and Fire Pumps -

Architectural Coating - O&M Building only

Solid Waste - No additional solid waste generated by storage warehouses

Area Coating -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	152,500.00	2,500.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	457,500.00	7,500.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	12.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	120.00	25.00
tblConstructionPhase	NumDays	310.00	235.00
tblConstructionPhase	NumDays	3,100.00	130.00
tblConstructionPhase	NumDays	3,100.00	235.00
tblConstructionPhase	NumDays	220.00	5.00

tblConstructionPhase	NumDays	3,100.00	434.00
tblEnergyUse	LightingElect	1.17	0.00
tblEnergyUse	NT24E	0.82	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	0.37	0.00
tblEnergyUse	T24NG	2.00	0.00
tblGrading	AcresOfGrading	0.00	148.00
tblGrading	AcresOfGrading	12.50	3.00
tblLandUse	LotAcreage	0.11	1.00
tblLandUse	LotAcreage	11.48	147.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	4.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	PhaseName		Common Facilities - Substation
tblOffRoadEquipment	PhaseName		Common Facilities - Bridge Construction
tblOffRoadEquipment	PhaseName		Common Facilities - Substation
tblOffRoadEquipment	PhaseName		Common Facilities - Substation
tblOffRoadEquipment	PhaseName		Common Facilities - Substation
tblOffRoadEquipment	PhaseName		Common Facilities - Substation
tblOffRoadEquipment	PhaseName		Common Facilities - Bridge Construction
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOnRoadDust	HaulingPercentPave	50.00	100.00
tblOnRoadDust	HaulingPercentPave	50.00	78.00
tblOnRoadDust	HaulingPercentPave	50.00	78.00
tblOnRoadDust	HaulingPercentPave	50.00	78.00
tblOnRoadDust	HaulingPercentPave	50.00	78.00

tblOnRoadDust	HaulingPercentPave	50.00	98.50
tblOnRoadDust	MaterialSiltContent	8.50	4.30
tblOnRoadDust	MaterialSiltContent	8.50	4.30
tblOnRoadDust	MaterialSiltContent	8.50	4.30
tblOnRoadDust	MaterialSiltContent	8.50	4.30
tblOnRoadDust	MaterialSiltContent	8.50	4.30
tblOnRoadDust	MaterialSiltContent	8.50	4.30
tblOnRoadDust	MeanVehicleSpeed	40.00	15.00
tblOnRoadDust	MeanVehicleSpeed	40.00	15.00
tblOnRoadDust	MeanVehicleSpeed	40.00	15.00
tblOnRoadDust	MeanVehicleSpeed	40.00	15.00
tblOnRoadDust	MeanVehicleSpeed	40.00	15.00
tblOnRoadDust	MeanVehicleSpeed	40.00	15.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	78.00
tblOnRoadDust	VendorPercentPave	50.00	78.00
tblOnRoadDust	VendorPercentPave	50.00	78.00
tblOnRoadDust	VendorPercentPave	50.00	78.00
tblOnRoadDust	VendorPercentPave	50.00	98.50
tblOnRoadDust	WorkerPercentPave	50.00	100.00
tblOnRoadDust	WorkerPercentPave	50.00	98.50
tblOnRoadDust	WorkerPercentPave	50.00	98.50
tblOnRoadDust	WorkerPercentPave	50.00	98.50
tblOnRoadDust	WorkerPercentPave	50.00	98.50
tblOnRoadDust	WorkerPercentPave	50.00	98.50
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.022
tblProjectCharacteristics	CO2IntensityFactor	1270.9	956.99

8888 Westside Canal Energy Center - Imperial County APCD Air District, Summer

tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblRoadDust	RoadPercentPave	50	98.5
tblSolidWaste	SolidWasteGenerationRate	282.00	0.00
tblTripsAndVMT	VendorTripLength	8.90	20.00
tblTripsAndVMT	VendorTripLength	8.90	20.00
tblTripsAndVMT	VendorTripLength	8.90	20.00
tblTripsAndVMT	VendorTripLength	8.90	20.00
tblTripsAndVMT	VendorTripLength	8.90	20.00
tblTripsAndVMT	VendorTripLength	8.90	20.00
tblTripsAndVMT	VendorTripNumber	0.00	12.00
tblTripsAndVMT	VendorTripNumber	50.00	0.00
tblTripsAndVMT	VendorTripNumber	50.00	60.00
tblTripsAndVMT	VendorTripNumber	50.00	60.00
tblTripsAndVMT	WorkerTripLength	7.30	20.00
tblTripsAndVMT	WorkerTripLength	7.30	20.00
tblTripsAndVMT	WorkerTripLength	7.30	20.00
tblTripsAndVMT	WorkerTripLength	7.30	20.00
tblTripsAndVMT	WorkerTripLength	7.30	20.00
tblTripsAndVMT	WorkerTripLength	7.30	20.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	128.00	0.00
tblTripsAndVMT	WorkerTripNumber	128.00	400.00
tblTripsAndVMT	WorkerTripNumber	26.00	0.00
tblTripsAndVMT	WorkerTripNumber	128.00	400.00
tblVehicleTrips	CC_TL	5.00	20.00
tblVehicleTrips	CC_TL	5.00	0.00

tblVehicleTrips	CNW_TL	8.90	20.00
tblVehicleTrips	CNW_TL	8.90	0.00
tblVehicleTrips	CW_TL	6.70	20.00
tblVehicleTrips	CW_TL	6.70	0.00
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	1.32	40.00
tblVehicleTrips	ST_TR	1.68	0.00
tblVehicleTrips	SU_TR	0.68	40.00
tblVehicleTrips	SU_TR	1.68	0.00
tblVehicleTrips	WD_TR	6.97	40.00
tblVehicleTrips	WD_TR	1.68	0.00
tblWater	IndoorWaterUseRate	1,156,250.00	3,650,000.00
tblWater	IndoorWaterUseRate	69,375,000.00	0.00
tblWater	OutdoorWaterUseRate	0.00	1,000,000.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	27.7232	107.3331	108.2749	0.2359	182.5519	4.3545	186.9064	19.3166	4.0074	23.3241	0.0000	23,255.9477	23,255.9477	4.9421	0.0000	23,379.4999
2022	9.9238	62.1534	78.0922	0.1759	69.9728	2.2782	72.2511	8.1540	2.0970	10.2510	0.0000	17,442.3572	17,442.3572	3.0953	0.0000	17,519.7403
2023	9.1708	53.8456	73.5660	0.1730	69.9728	1.9739	71.9468	8.1540	1.8164	9.9705	0.0000	17,154.4955	17,154.4955	3.0354	0.0000	17,230.3814
Maximum	**27.7232**	**107.3331**	**108.2749**	**0.2359**	**182.5519**	**4.3545**	**186.9064**	**19.3166**	**4.0074**	**23.3241**	**0.0000**	**23,255.9477**	**23,255.9477**	**4.9421**	**0.0000**	**23,379.4999**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	22.4304	81.7972	129.4287	0.2359	75.4284	3.3424	78.7708	8.6743	3.3382	12.0125	0.0000	23,255.9477	23,255.9477	4.9421	0.0000	23,379.4999
2022	7.0898	51.9172	90.9327	0.1759	31.6217	1.9243	33.5461	4.3453	1.9205	6.2657	0.0000	17,442.3572	17,442.3572	3.0953	0.0000	17,519.7403
2023	6.7332	49.0917	87.4349	0.1730	31.6217	1.9062	33.5279	4.3453	1.9032	6.2484	0.0000	17,154.4955	17,154.4955	3.0354	0.0000	17,230.3814
Maximum	**22.4304**	**81.7972**	**129.4287**	**0.2359**	**75.4284**	**3.3424**	**78.7708**	**8.6743**	**3.3382**	**12.0125**	**0.0000**	**23,255.9477**	**23,255.9477**	**4.9421**	**0.0000**	**23,379.4999**

8888 Westside Canal Energy Center - Imperial County APCD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**22.57**	**18.15**	**-18.41**	**0.00**	**57.00**	**16.66**	**55.95**	**51.26**	**9.58**	**43.68**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.9737	4.7000e-004	0.0516	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1105	0.1105	2.9000e-004		0.1178
Energy	4.8000e-003	0.0436	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003		52.3610	52.3610	1.0000e-003	9.6000e-004	52.6722
Mobile	1.0635	6.9956	18.3452	0.0467	47.7479	0.0307	47.7785	5.2769	0.0289	5.3058		4,749.9406	4,749.9406	0.2681		4,756.6419
Total	**13.0420**	**7.0397**	**18.4335**	**0.0470**	**47.7479**	**0.0342**	**47.7820**	**5.2769**	**0.0324**	**5.3093**		**4,802.4122**	**4,802.4122**	**0.2693**	**9.6000e-004**	**4,809.4319**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.9737	4.7000e-004	0.0516	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1105	0.1105	2.9000e-004		0.1178
Energy	4.8000e-003	0.0436	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003		52.3610	52.3610	1.0000e-003	9.6000e-004	52.6722
Mobile	1.0635	6.9956	18.3452	0.0467	47.7479	0.0307	47.7785	5.2769	0.0289	5.3058		4,749.9406	4,749.9406	0.2681		4,756.6419
Total	**13.0420**	**7.0397**	**18.4335**	**0.0470**	**47.7479**	**0.0342**	**47.7820**	**5.2769**	**0.0324**	**5.3093**		**4,802.4122**	**4,802.4122**	**0.2693**	**9.6000e-004**	**4,809.4319**

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

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Common Facilities - Acess Road	Site Preparation	1/4/2021	2/5/2021	5	25	
2	Common Facilities - Substation	Grading	2/8/2021	12/31/2021	5	235	
3	Common Facilities - Bridge Construction	Building Construction	2/8/2021	8/6/2021	5	130	
4	Battery Storage 1	Building Construction	2/8/2021	12/31/2021	5	235	
5	O&M Building - Architectural Coating	Architectural Coating	12/27/2021	12/31/2021	5	5	
6	Battery Storage 2-5	Building Construction	1/3/2022	8/31/2023	5	434	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 7,500; Non-Residential Outdoor: 2,500; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Common Facilities - Acess Road	Graders	1	8.00	187	0.41
Common Facilities - Acess Road	Rubber Tired Dozers	0	8.00	247	0.40
Common Facilities - Acess Road	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Common Facilities - Substation	Bore/Drill Rigs	0	8.00	221	0.50

Common Facilities - Substation	Cranes	3	8.00	231	0.29
Common Facilities - Substation	Excavators	0	8.00	158	0.38
Common Facilities - Substation	Forklifts	1	8.00	89	0.20
Common Facilities - Substation	Graders	0	8.00	187	0.41
Common Facilities - Substation	Off-Highway Trucks	1	8.00	402	0.38
Common Facilities - Substation	Rollers	1	8.00	80	0.38
Common Facilities - Substation	Rubber Tired Dozers	0	8.00	247	0.40
Common Facilities - Substation	Scrapers	0	8.00	367	0.48
Common Facilities - Substation	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Common Facilities - Bridge Construction	Bore/Drill Rigs	1	8.00	221	0.50
Common Facilities - Bridge Construction	Cranes	0	7.00	231	0.29
Common Facilities - Bridge Construction	Forklifts	1	8.00	89	0.20
Common Facilities - Bridge Construction	Rollers	1	8.00	80	0.38
Common Facilities - Bridge Construction	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Common Facilities - Bridge Construction	Welders	0	8.00	46	0.45
Battery Storage 1	Cranes	3	8.00	231	0.29
Battery Storage 1	Excavators	1	8.00	158	0.38
Battery Storage 1	Forklifts	1	8.00	89	0.20
Battery Storage 1	Generator Sets	0	8.00	84	0.74
Battery Storage 1	Graders	1	8.00	187	0.41
Battery Storage 1	Off-Highway Trucks	1	8.00	402	0.38
Battery Storage 1	Pumps	0	8.00	84	0.74
Battery Storage 1	Rollers	1	8.00	80	0.38
Battery Storage 1	Rubber Tired Dozers	1	8.00	247	0.40
Battery Storage 1	Scrapers	1	8.00	367	0.48
Battery Storage 1	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Battery Storage 1	Welders	0	8.00	46	0.45
O&M Building - Architectural Coating	Air Compressors	1	8.00	78	0.48
Battery Storage 2-5	Cranes	3	8.00	231	0.29
Battery Storage 2-5	Excavators	1	8.00	158	0.38
Battery Storage 2-5	Forklifts	1	8.00	89	0.20
Battery Storage 2-5	Generator Sets	0	8.00	84	0.74
Battery Storage 2-5	Graders	1	8.00	187	0.41
Battery Storage 2-5	Off-Highway Trucks	1	8.00	402	0.38
Battery Storage 2-5	Pumps	0	8.00	84	0.74
Battery Storage 2-5	Rollers	1	8.00	80	0.38
Battery Storage 2-5	Rubber Tired Dozers	1	8.00	247	0.40
Battery Storage 2-5	Scrapers	1	8.00	367	0.48
Battery Storage 2-5	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Battery Storage 2-5	Welders	0	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Common Facilities - Acess Road	2	10.00	12.00	0.00	20.00	20.00	20.00	LD_Mix	HDT_Mix	HHDT
Common Facilities - Substation	8	0.00	0.00	0.00	20.00	20.00	20.00	LD_Mix	HDT_Mix	HHDT
Common Facilities - Bridge Construction	4	0.00	0.00	0.00	20.00	20.00	20.00	LD_Mix	HDT_Mix	HHDT
Battery Storage 1	14	400.00	60.00	0.00	20.00	20.00	20.00	LD_Mix	HDT_Mix	HHDT
O&M Building - Architectural Coating	1	0.00	0.00	0.00	20.00	20.00	20.00	LD_Mix	HDT_Mix	HHDT
Battery Storage 2-5	14	400.00	60.00	0.00	20.00	20.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Common Facilities - Acess Road - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1273	0.0000	0.1273	0.0137	0.0000	0.0137			0.0000			0.0000
Off-Road	0.6403	7.8204	4.0274	9.7300e-003		0.2995	0.2995		0.2755	0.2755		942.5842	942.5842	0.3049		950.2055
Total	**0.6403**	**7.8204**	**4.0274**	**9.7300e-003**	**0.1273**	**0.2995**	**0.4267**	**0.0137**	**0.2755**	**0.2893**		**942.5842**	**942.5842**	**0.3049**		**950.2055**

3.2 Common Facilities - Acess Road - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0734	1.7005	0.4808	7.3600e-003	0.2224	6.6000e-003	0.2290	0.0640	6.3200e-003	0.0703		769.5307	769.5307	0.0222		770.0863
Worker	0.1263	0.0963	1.0911	1.4700e-003	0.1520	8.8000e-004	0.1529	0.0403	8.1000e-004	0.0411		145.9239	145.9239	0.0110		146.1999
Total	**0.1996**	**1.7968**	**1.5718**	**8.8300e-003**	**0.3744**	**7.4800e-003**	**0.3819**	**0.1043**	**7.1300e-003**	**0.1114**		**915.4545**	**915.4545**	**0.0333**		**916.2862**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0496	0.0000	0.0496	5.3600e-003	0.0000	5.3600e-003			0.0000			0.0000
Off-Road	0.2382	4.8716	5.8579	9.7300e-003		0.2405	0.2405		0.2405	0.2405	0.0000	942.5842	942.5842	0.3049		950.2055
Total	**0.2382**	**4.8716**	**5.8579**	**9.7300e-003**	**0.0496**	**0.2405**	**0.2902**	**5.3600e-003**	**0.2405**	**0.2459**	**0.0000**	**942.5842**	**942.5842**	**0.3049**		**950.2055**

3.2 Common Facilities - Acess Road - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0734	1.7005	0.4808	7.3600e-003	0.2224	6.6000e-003	0.2290	0.0640	6.3200e-003	0.0703		769.5307	769.5307	0.0222		770.0863
Worker	0.1263	0.0963	1.0911	1.4700e-003	0.1520	8.8000e-004	0.1529	0.0403	8.1000e-004	0.0411		145.9239	145.9239	0.0110		146.1999
Total	**0.1996**	**1.7968**	**1.5718**	**8.8300e-003**	**0.3744**	**7.4800e-003**	**0.3819**	**0.1043**	**7.1300e-003**	**0.1114**		**915.4545**	**915.4545**	**0.0333**		**916.2862**

3.3 Common Facilities - Substation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.6679	0.0000	0.6679	0.0721	0.0000	0.0721			0.0000			0.0000
Off-Road	2.5380	26.7064	17.1216	0.0409		1.2086	1.2086		1.1119	1.1119		3,958.6592	3,958.6592	1.2803		3,990.6669
Total	**2.5380**	**26.7064**	**17.1216**	**0.0409**	**0.6679**	**1.2086**	**1.8765**	**0.0721**	**1.1119**	**1.1840**		**3,958.6592**	**3,958.6592**	**1.2803**		**3,990.6669**

3.3 Common Facilities - Substation - 2021

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2605	0.0000	0.2605	0.0281	0.0000	0.0281			0.0000			0.0000
Off-Road	1.0026	20.2719	24.0502	0.0409		0.9553	0.9553		0.9553	0.9553	0.0000	3,958.6592	3,958.6592	1.2803		3,990.6669
Total	**1.0026**	**20.2719**	**24.0502**	**0.0409**	**0.2605**	**0.9553**	**1.2158**	**0.0281**	**0.9553**	**0.9834**	**0.0000**	**3,958.6592**	**3,958.6592**	**1.2803**		**3,990.6669**

3.3 Common Facilities - Substation - 2021

Mitigated Construction Off-Site

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

3.4 Common Facilities - Bridge Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7643	8.0219	7.3825	0.0167		0.4047	0.4047		0.3724	0.3724		1,615.0822	1,615.0822	0.5224		1,628.1410
Total	**0.7643**	**8.0219**	**7.3825**	**0.0167**		**0.4047**	**0.4047**		**0.3724**	**0.3724**		**1,615.0822**	**1,615.0822**	**0.5224**		**1,628.1410**

3.4 Common Facilities - Bridge Construction - 2021

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4118	8.5851	10.5546	0.0167		0.4563	0.4563		0.4563	0.4563	0.0000	1,615.0822	1,615.0822	0.5224		1,628.1410
Total	**0.4118**	**8.5851**	**10.5546**	**0.0167**		**0.4563**	**0.4563**		**0.4563**	**0.4563**	**0.0000**	**1,615.0822**	**1,615.0822**	**0.5224**		**1,628.1410**

3.4 Common Facilities - Bridge Construction - 2021

Mitigated Construction Off-Site

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

3.5 Battery Storage 1 - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	5.5705	60.2500	37.7236	0.0826		2.6731	2.6731		2.4593	2.4593		7,997.5991	7,997.5991	2.5866		8,062.2637
Total	**5.5705**	**60.2500**	**37.7236**	**0.0826**		**2.6731**	**2.6731**		**2.4593**	**2.4593**		**7,997.5991**	**7,997.5991**	**2.5866**		**8,062.2637**

3.5 Battery Storage 1 - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3668	8.5024	2.4038	0.0368	121.2116	0.0330	121.2446	12.2218	0.0316	12.2534		3,847.6533	3,847.6533	0.1111		3,850.4313
Worker	5.0510	3.8524	43.6434	0.0590	60.6725	0.0351	60.7076	7.0227	0.0323	7.0550		5,836.9540	5,836.9540	0.4417		5,847.9970
Total	**5.4178**	**12.3548**	**46.0472**	**0.0958**	**181.8840**	**0.0681**	**181.9521**	**19.2445**	**0.0639**	**19.3084**		**9,684.6073**	**9,684.6073**	**0.5528**		**9,698.4283**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0258	40.5854	48.7768	0.0826		1.8627	1.8627		1.8627	1.8627	0.0000	7,997.5991	7,997.5991	2.5866		8,062.2637
Total	**2.0258**	**40.5854**	**48.7768**	**0.0826**		**1.8627**	**1.8627**		**1.8627**	**1.8627**	**0.0000**	**7,997.5991**	**7,997.5991**	**2.5866**		**8,062.2637**

3.5 Battery Storage 1 - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3668	8.5024	2.4038	0.0368	47.8442	0.0330	47.8772	4.9355	0.0316	4.9671		3,847.6533	3,847.6533	0.1111		3,850.4313
Worker	5.0510	3.8524	43.6434	0.0590	27.3237	0.0351	27.3588	3.7107	0.0323	3.7430		5,836.9540	5,836.9540	0.4417		5,847.9970
Total	**5.4178**	**12.3548**	**46.0472**	**0.0958**	**75.1679**	**0.0681**	**75.2360**	**8.6462**	**0.0639**	**8.7101**		**9,684.6073**	**9,684.6073**	**0.5528**		**9,698.4283**

3.6 O&M Building - Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.9050					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2919	2.0358	2.4234	3.9600e-003		0.1255	0.1255		0.1255	0.1255		375.2641	375.2641	0.0258		375.9079
Total	**14.1969**	**2.0358**	**2.4234**	**3.9600e-003**		**0.1255**	**0.1255**		**0.1255**	**0.1255**		**375.2641**	**375.2641**	**0.0258**		**375.9079**

3.6 O&M Building - Architectural Coating - 2021

Unmitigated Construction Off-Site

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

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.9050					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0792	1.8093	2.4432	3.9600e-003		0.1268	0.1268		0.1268	0.1268	0.0000	375.2641	375.2641	0.0258		375.9079
Total	**13.9842**	**1.8093**	**2.4432**	**3.9600e-003**		**0.1268**	**0.1268**		**0.1268**	**0.1268**	**0.0000**	**375.2641**	**375.2641**	**0.0258**		**375.9079**

3.6 O&M Building - Architectural Coating - 2021

Mitigated Construction Off-Site

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

3.7 Battery Storage 2-5 - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.8598	50.8216	35.9363	0.0826		2.2166	2.2166		2.0393	2.0393		8,001.1903	8,001.1903	2.5878		8,065.8839
Total	**4.8598**	**50.8216**	**35.9363**	**0.0826**		**2.2166**	**2.2166**		**2.0393**	**2.0393**		**8,001.1903**	**8,001.1903**	**2.5878**		**8,065.8839**

3.7 Battery Storage 2-5 - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3397	7.7940	2.1713	0.0365	9.3004	0.0281	9.3285	1.1314	0.0269	1.1582		3,817.5313	3,817.5313	0.1043		3,820.1394
Worker	4.7243	3.5378	39.9847	0.0568	60.6725	0.0336	60.7060	7.0227	0.0309	7.0536		5,623.6357	5,623.6357	0.4033		5,633.7170
Total	**5.0640**	**11.3318**	**42.1559**	**0.0933**	**69.9728**	**0.0616**	**70.0345**	**8.1540**	**0.0578**	**8.2118**		**9,441.1669**	**9,441.1669**	**0.5076**		**9,453.8564**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0258	40.5854	48.7768	0.0826		1.8627	1.8627		1.8627	1.8627	0.0000	8,001.1903	8,001.1903	2.5878		8,065.8839
Total	**2.0258**	**40.5854**	**48.7768**	**0.0826**		**1.8627**	**1.8627**		**1.8627**	**1.8627**	**0.0000**	**8,001.1903**	**8,001.1903**	**2.5878**		**8,065.8839**

3.7 Battery Storage 2-5 - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3397	7.7940	2.1713	0.0365	4.2981	0.0281	4.3261	0.6346	0.0269	0.6614		3,817.5313	3,817.5313	0.1043		3,820.1394
Worker	4.7243	3.5378	39.9847	0.0568	27.3237	0.0336	27.3572	3.7107	0.0309	3.7416		5,623.6357	5,623.6357	0.4033		5,633.7170
Total	**5.0640**	**11.3318**	**42.1559**	**0.0933**	**31.6217**	**0.0616**	**31.6834**	**4.3453**	**0.0578**	**4.4030**		**9,441.1669**	**9,441.1669**	**0.5076**		**9,453.8564**

3.7 Battery Storage 2-5 - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	4.4634	45.3392	34.9078	0.0827		1.9304	1.9304		1.7760	1.7760		8,002.8810	8,002.8810	2.5883		8,067.5884
Total	**4.4634**	**45.3392**	**34.9078**	**0.0827**		**1.9304**	**1.9304**		**1.7760**	**1.7760**		**8,002.8810**	**8,002.8810**	**2.5883**		**8,067.5884**

3.7 Battery Storage 2-5 - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2755	5.2427	1.8851	0.0358	9.3004	0.0113	9.3116	1.1314	0.0108	1.1421		3,741.5907	3,741.5907	0.0778		3,743.5347
Worker	4.4318	3.2637	36.7730	0.0546	60.6725	0.0322	60.7047	7.0227	0.0297	7.0524		5,410.0238	5,410.0238	0.3694		5,419.2583
Total	**4.7074**	**8.5064**	**38.6582**	**0.0904**	**69.9728**	**0.0435**	**70.0163**	**8.1540**	**0.0404**	**8.1945**		**9,151.6145**	**9,151.6145**	**0.4471**		**9,162.7930**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0258	40.5854	48.7768	0.0827		1.8627	1.8627		1.8627	1.8627	0.0000	8,002.8810	8,002.8810	2.5883		8,067.5884
Total	**2.0258**	**40.5854**	**48.7768**	**0.0827**		**1.8627**	**1.8627**		**1.8627**	**1.8627**	**0.0000**	**8,002.8810**	**8,002.8810**	**2.5883**		**8,067.5884**

3.7 Battery Storage 2-5 - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2755	5.2427	1.8851	0.0358	4.2981	0.0113	4.3093	0.6346	0.0108	0.6453		3,741.5907	3,741.5907	0.0778		3,743.5347
Worker	4.4318	3.2637	36.7730	0.0546	27.3237	0.0322	27.3559	3.7107	0.0297	3.7404		5,410.0238	5,410.0238	0.3694		5,419.2583
Total	**4.7074**	**8.5064**	**38.6582**	**0.0904**	**31.6217**	**0.0435**	**31.6652**	**4.3453**	**0.0404**	**4.3857**		**9,151.6145**	**9,151.6145**	**0.4471**		**9,162.7930**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.0635	6.9956	18.3452	0.0467	47.7479	0.0307	47.7785	5.2769	0.0289	5.3058		4,749.9406	4,749.9406	0.2681		4,756.6419
Unmitigated	1.0635	6.9956	18.3452	0.0467	47.7479	0.0307	47.7785	5.2769	0.0289	5.3058		4,749.9406	4,749.9406	0.2681		4,756.6419

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	200.00	200.00	200.00	1,456,000	1,456,000
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	200.00	200.00	200.00	1,456,000	1,456,000

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	20.00	20.00	20.00	59.00	28.00	13.00	100	0	0
Unrefrigerated Warehouse-No	0.00	0.00	0.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.514862	0.031726	0.160627	0.119887	0.016529	0.004969	0.019101	0.120993	0.003465	0.001214	0.005236	0.000734	0.000658
Unrefrigerated Warehouse-No Rail	0.514862	0.031726	0.160627	0.119887	0.016529	0.004969	0.019101	0.120993	0.003465	0.001214	0.005236	0.000734	0.000658

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	4.8000e-003	0.0436	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003		52.3610	52.3610	1.0000e-003	9.6000e-004	52.6722
NaturalGas Unmitigated	4.8000e-003	0.0436	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003		52.3610	52.3610	1.0000e-003	9.6000e-004	52.6722

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	445.068	4.8000e-003	0.0436	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003		52.3610	52.3610	1.0000e-003	9.6000e-004	52.6722
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.8000e-003**	**0.0436**	**0.0367**	**2.6000e-004**		**3.3200e-003**	**3.3200e-003**		**3.3200e-003**	**3.3200e-003**		**52.3610**	**52.3610**	**1.0000e-003**	**9.6000e-004**	**52.6722**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0.445068	4.8000e-003	0.0436	0.0367	2.6000e-004		3.3200e-003	3.3200e-003		3.3200e-003	3.3200e-003		52.3610	52.3610	1.0000e-003	9.6000e-004	52.6722
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**4.8000e-003**	**0.0436**	**0.0367**	**2.6000e-004**		**3.3200e-003**	**3.3200e-003**		**3.3200e-003**	**3.3200e-003**		**52.3610**	**52.3610**	**1.0000e-003**	**9.6000e-004**	**52.6722**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.9737	4.7000e-004	0.0516	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1105	0.1105	2.9000e-004		0.1178
Unmitigated	11.9737	4.7000e-004	0.0516	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1105	0.1105	2.9000e-004		0.1178

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.1619					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.8070					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8000e-003	4.7000e-004	0.0516	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1105	0.1105	2.9000e-004		0.1178
Total	**11.9737**	**4.7000e-004**	**0.0516**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1105**	**0.1105**	**2.9000e-004**		**0.1178**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.1619					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.8070					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8000e-003	4.7000e-004	0.0516	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1105	0.1105	2.9000e-004		0.1178
Total	**11.9737**	**4.7000e-004**	**0.0516**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1105**	**0.1105**	**2.9000e-004**		**0.1178**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT 3

Emergency Generator Testing Calculations

8888.1 Westside Canal Battery Storage Project
Propane-Fueled Generator Testing

AP-42 Emission Factor		lb/1,000 gal				
Fuel Type	TOC	Nox	CO	Sox	PM10	PM2.5
Propane	1	13	7.5	0.00015	0.7	0.7
				S=sulphur content=.0015		
Fuel Consumption Rate				0.1S		
Load						
50%	11.72	gal/hr				
100%	22.57	gal/hr				

Source:
AP42 Section 1.5 Liquefied Petroleum Gas Combustion, update July 2008 (epa.gov)

Generac Commercial QT15068GVAC Series 150kW Standby Generator 120/208V 3-PhaseLP SCAQMD Compliant (electricgeneratorsdirect.com)

# of Generators	20	generators
Testing time per generator	2	hours
Max testing time per day	40	hours
Max daily fuel consumption	903	gallons

Generator Pollutant Emissions	TOC	Nox	CO	Sox	PM10	PM2.5
Emission Factor (lbs/1,000 gal)	1	13	7.5	0.00015	0.7	0.7
Emissions (lbs/day)	0.90	11.74	6.77	0.00	0.63	0.63
Total Pollutant Emissions						
Operational Emissions From Airtec	12.82	7.30	13.37	0.04	47.78	5.31
Total Emissions	13.72	19.03	20.14	0.04	48.41	5.94
Threshold	137	137	550	150	150	550