
Appendix D-1

Air Quality Technical Memorandum

MEMORANDUM

To:	Double Butte Storage, LLC
From:	Nicholas Lorenzen, Dudek
Subject:	Double Butte Storage Project Air Quality and Greenhouse Gas Emissions Technical Memorandum
Date:	September 6, 2024
cc:	Keith Carwana and Cindi Hoover, Dudek
Attachment(s):	Attachment A – CalEEMod Emissions Outputs Attachment B – Health Risk Assessment Output Files

Dudek is pleased to present AES Clean Energy Development, LLC, with the following air quality and greenhouse gas (GHG) analysis for the proposed Double Butte Storage Project (Project) located in the City of Menifee (City). This memorandum estimates criteria air pollutant and GHG emissions and impacts from construction and operation of the Project in accordance with the California Environmental Quality Act (CEQA) Guidelines.

The contents and organization of this memorandum are as follows: Project Description, General Analysis and Methodology, Thresholds of Significance, and Impact Analyses for the Air Quality Assessment GHG Emissions Assessment, and Energy demand Assessment, Conclusions, and References Cited.

1 Project Description

Utilizing similar battery technology used in electric vehicles, the Project would provide additional capacity to the electrical grid to assist with serving load during periods of peak demand by charging when demand is low and discharging when demand is high. This accommodates the integration of additional intermittent renewables such as wind and solar and reduces the need to operate natural gas power plants. The Project site consists of approximately 27 acres and is located at the intersection of Case Road and Palomar Road in the City of Menifee, California 92585 on Riverside County Assessor's Parcel Numbers 331-190-010, 331-190-011, 331-190-014, 331-190-017, 331-190-047, 331-190-056, and 331-190-060. The site is bordered on the west by the decommissioned Inland Empire Energy Center (IEEC). The Southern California Edison (SCE) Valley substation is located nearby to the east of the project site. Other surrounding land uses include high voltage transmission lines, a Riverside County Flood Control channel, decommissioned railroad tracks, commercial and industrial properties, and vacant land. The project site is located within Planning Area 3 of the Menifee North Specific Plan No. 260 and is zoned for Industrial uses (PA3).

The project is a 500 MW BESS that will be constructed in phases or all at once, depending on when full capacity is needed. To support the facility, the Project will require a gen-tie alignment connecting the BESS to the existing SCE Valley substation. The Project would include the following components as well as associated SCE facility and local infrastructural improvements, which are described in more detail in the following bulleted list:

- **Energy Storage Facility:** Modular energy storage enclosures, thermal management systems, and related appurtenances would be constructed that would provide energy storage capacity and dispatch for the electric grid.
- **Power Inverters and Medium-Voltage Transformers:** Power inverters to convert between alternating current and direct current would be included, along with medium voltage transformers.
- **Collector Substation:** A collector substation would be installed that would include the open rack, air insulated switch gear, emergency generator, and the main power transformer to step up from 34.5 kV to 66 kV.
- **Communications Facilities:** Telecommunication equipment, including a supervisory control and data acquisition (SCADA) system that would allow for remote monitoring and control of the facility, would be installed.
- **Site Access, Landscaping, and Security:** The Project proposes a six-foot solid wall along the northern, eastern, and southern edges of the site boundary, with tubular steel to be used to create a perimeter wall along the western edge of the site. Landscaping consisting of a mix of trees and shrubs would be installed as per the City of Menifee's requirements. On-site access driveways, 12 on-site parking stalls, signage, and directed nighttime lighting in the battery storage areas would be provided for the Project.
- **Gen-Tie Line:** A 66kV gen-tie line would be constructed to transfer power between the existing SCE Valley substation via a gen-tie alignment extending approximately 1,500 feet, crossing over Case Road to the east of the site. The gen-tie would be constructed with either monopoles, lattice steel structures, or H-frame poles, with gen-tie structures averaging 145 feet tall, with a maximum height of 195 feet. Exact location of the gen-tie line would depend on coordination with local landowners to obtain easements for the alignment.
- **SCE Valley Substation Upgrades:** Improvements to the offsite SCE interconnection facility would include a 500 kV dead-end switchyard structure, three 500kV transformers placed on steel pedestal supports, 500kV line drops and current differential relays, and associated monitoring infrastructure, including telecoms and metering systems.
- **Off-site Improvements:** The Project would include improvements to Palomar and San Jacinto Roads to provide site access to workers and emergency services, including improvements to travel lands, pedestrian paths, and curbs. This would involve the expansion of eastern half of Palomar Road to the standards of a "Collector Road" and to expansion of the western half of San Jacinto Road to the standards of a "Local Road."

The facilities are intended to operate year-round and would be available to receive or deliver energy 24 hours a day and 365 days a year.

2 General Analysis and Methodology

The Project Site is located within the South Coast Air Basin (SCAB) and is within the jurisdictional boundaries of the South Coast Air Quality Management District (SCAQMD), which has jurisdiction over Riverside County (County) where the Project is located.

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. Criteria air pollutants that are evaluated include volatile organic compounds (VOCs; also referred to as reactive organic gases [ROGs]), oxides of nitrogen (NO_x), carbon monoxide (CO), sulfur oxides (SO_x), particulate matter with an aerodynamic diameter less than or equal to 10 microns in size (coarse particulate matter, or PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns in size (fine particulate matter, or $\text{PM}_{2.5}$). VOCs and NO_x are important because they are precursors to ozone (O_3). Criteria air pollutant emissions associated with construction of the Project were estimated for the following emission sources: operation of off-road construction equipment, paving, architectural coating, on-road vendor (material delivery) trucks, and worker vehicles. The operational criteria air pollutant emissions were estimated from area sources, energy sources, and mobile sources.

GHGs are gases that absorb infrared radiation in the atmosphere. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature. Global climate change concerns are focused on whether human activities are leading to an enhancement of the greenhouse effect. Principal GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), O_3 , and water vapor. If the atmospheric concentrations of GHGs rise, the average temperature of the lower atmosphere will gradually increase. Globally, climate change has the potential to impact numerous environmental resources though uncertain impacts related to future air temperatures and precipitation patterns. Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. Climate change is already affecting California: average temperatures have increased, leading to more extreme hot days and fewer cold nights; shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year; sea levels have risen; and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (California Energy Commission [CEC] 2018).

The effect each GHG has on climate change is measured as a combination of the mass of its emissions and the potential of a gas or aerosol to trap heat in the atmosphere, known as its global warming potential (GWP), which varies among GHGs. Total GHG emissions are expressed as a function of how much warming would be caused by the same mass of CO_2 . Thus, GHG emissions are typically measured in terms of pounds or tons of CO_2 equivalent (CO_2e). The CO_2e for a gas is derived by multiplying the mass of the gas by the associated GWP, such that metric tons (MT) of $\text{CO}_2\text{e} = (\text{MT of a GHG}) \times (\text{GWP of the GHG})$. CalEEMod assumes that the GWP for CH_4 is 25, which means that emissions of one MT of CH_4 are equivalent to emissions of 25 MT of CO_2 , and the GWP for N_2O is 298, based on the Intergovernmental Panel on Climate Change's (IPCC's) Fourth Assessment Report (IPCC 2007).

GHG emissions associated with construction of the Project were estimated for the following emission sources: operation of off-road construction equipment, on-road vendor trucks, and worker vehicles. GHG emission sources associated with operation of the Project include area, energy, mobile, solid waste, water, and wastewater categories. The detailed Project construction and operational assumptions are included in Attachment A.

2.1 Construction

The California Emissions Estimator Model (CalEEMod) Version 2022.1 was used to estimate emissions from construction of the Project (California Air Pollution Control Officers Association (CAPCOA) 2022). CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant and GHG emissions associated with construction activities and operation of a variety of land use projects, such as residential, commercial, and industrial facilities. CalEEMod input parameters, including the land use type used to represent the Project and its size, construction schedule, and anticipated use of construction equipment,

were based on information provided by the applicant or default model assumptions if Project specifics were unavailable. Construction was assumed to commence in April 2024 and last approximately 12 months. The first year of operation was assumed to be 2025¹. For the analysis, it was generally assumed that heavy construction equipment would be operating at the site for up to 8 hours per day (depending on phase), 5 days per week (22 days per month), during project construction. In addition to construction equipment operation, emissions from worker trips and vendor trucks (i.e., delivery trucks) were estimated based on CalEEMod defaults. For decommissioning, it is anticipated that with a 30-year lifespan decommissioning would occur in 2055, the CARB EMFAC within CalEEMod only provides emission factors through 2050. As such, year 2050 was assumed for modeling for decommissioning. Vendor trucks transporting building materials were assumed for building construction. The Project would include 37,743 cubic yards of cut and 38,336 cubic yards of fill, resulting in a necessary 593 cubic yards of export during the grading phase. The analysis contained herein is based on the following subset area schedule assumptions (duration of phases is approximate):

- Site Preparation – 1.5 months
- Grading – 1.5 months
- Collector Substation Installation – 8 months
- Battery/Container Installation – 8 months
- Gen-tie Foundation and Tower Erection – 5 months
- Gen-tie Stringing and Pulling – 1 month
- SCE Valley Substation Interconnection Facility Upgrades – 12 months
- Decommissioning – 6 months (year 2055)

Average daily emissions were computed by dividing the total construction emissions by the number of active construction days. The construction equipment mix and estimated hours of equipment operation per day used for the air emissions modeling of the project are based on CalEEMod defaults and are shown in Table 1. Additional details regarding construction assumptions are provided in the modeling output, Attachment A. The Project would be required to comply with SCAQMD Rule 403 to control dust emissions generated during any dust-generating activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active dust areas two times per day, with additional watering depending on weather conditions. The CalEEMod default assumptions were used for estimating fugitive dust emissions from grading on site.

Table 1: Double Butte Battery Energy Storage Project - Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Usage Hours
Site Preparation	40	0	0	Graders	2	8
				Rubber Tired Loaders	2	8

¹ The analysis assumes a construction start date of April 2024, which represents the earliest date construction would initiate. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant and GHG emissions, because equipment and vehicle emission factors for later years would be slightly less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years.

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Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Usage Hours
Grading	40	0	369	Skid Steer Loaders	2	8
				Tractors/Loaders/Backhoes	2	8
				Graders	2	8
				Plate Compactors	2	8
				Rollers	2	8
				Rubber Tired Loaders	2	8
				Skid Steer Loaders	2	8
				Tractors/Loaders/Backhoes	2	8
Battery/Container Installation	40	20	4	Air Compressors	4	8
				Cranes	2	8
				Excavators	2	8
				Generator Sets	4	8
				Plate Compactors	2	8
				Rollers	2	8
				Rough Terrain Forklifts	2	8
				Skid Steer Loaders	2	8
Collector Substation Installation	40	20	0	Tractors/Loaders/Backhoes	2	8
				Aerial Lifts	6	8
				Air Compressors	2	8
				Bore/Drill Rigs	2	8
				Cranes	2	8
				Excavators	2	8
				Generator Sets	2	8
				Rollers	2	8
				Rough Terrain Forklifts	2	8
				Rubber Tired Dozers	2	8
				Skid Steer Loaders	2	8
				Tractors/Loaders/Backhoes	4	8
SCE Valley Substation Interconnection Facility Upgrades	40	20	0	Trenchers	4	8
				Aerial Lifts	6	8
				Air Compressors	2	8
				Bore/Drill Rigs	2	8
				Cranes	2	8
				Excavators	2	8
				Generator Sets	2	8

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Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	Average Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Usage Hours
				Rollers	2	8
				Rough Terrain Forklifts	2	8
				Rubber Tired Dozers	2	8
				Skid Steer Loaders	2	8
				Tractors/Loaders/Backhoes	4	8
				Trenchers	4	8
Gen-tie foundation and tower erection	10	2	0	Air Compressors	2	8
				Cranes	2	8
				Forklifts	2	8
				Generator Sets	2	8
				Pumps	2	8
Gen-tie stringing and pulling	8	2	0	Forklifts	2	8
				Generator Sets	2	8
				Tractors/Loaders/Backhoes	2	8
Decommissioning	40	2	2,640	Concrete/Industrial Saws	2	8
				Cranes	2	8
				Rubber Tired Dozers	2	8
				Tractors/Loaders/Backhoes	2	8
Access Road construction	20	20	100	Pavers	2	8
				Paving Equipment	2	8
				Rollers	2	8
				Cement and Mortar Mixers	2	8
				Tractors/Loaders/Backhoes	2	8

Note: See Attachment A for details.

2.2 Operations

Area Sources

During operations and maintenance, one of the main sources of GHG emissions would be fugitive emissions from equipment containing SF₆ gas installed at the proposed collector substation. SF₆ has a GWP of 23,900 using CO₂ at a reference value of 1 (IPCC 2007). The collector substation would include 138 kilovolt (kV) breakers that would contain SF₆ gas. It is estimated that the project would maintain a total of 2,400 pounds (lbs) of SF₆ gas at the collector substation. Although leakage is unlikely, for the purposes of the project's emissions inventory, it was assumed that the breakers would have a maximum annual leak rate of 0.5% in accordance with the Institute of

Electrical and Electronics Engineers (IEEE) PC37.122 - Standard for High Voltage Gas-Insulated Substations Rated Above 52 kV (IEEE 2018). Emissions from SF₆ gas are included as part of area source emissions.

Energy Sources

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage. Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for GHGs in CalEEMod, since criteria pollutant emissions occur at the site of the power plant, which is typically off site. The auxiliary energy use associated with the project was provided by the Applicant and estimated to be 17,905 megawatt-hours per year.

The estimation of operational energy emissions was based on CalEEMod land use defaults and units or total area (i.e., square footage) of the Project's land uses. For nonresidential buildings, CalEEMod energy intensity value (electricity or natural gas usage per square foot per year) assumptions were based on the California Commercial End-Use Survey database. Emissions are calculated by multiplying the energy use by the utility carbon intensity (pounds of GHGs per kilowatt-hour for electricity or 1,000 British thermal units for natural gas) for CO₂ and other GHGs. Annual natural gas (non-hearth) and electricity emissions were estimated in CalEEMod using the emissions factors for SCE, which would be the energy source provider for the Project. The Project was not assumed to use natural gas. CalEEMod default energy intensity factors (CO₂, CH₄, and N₂O mass emissions per kilowatt-hour) for SCE is based on the value for SCE's energy mix in 2025.

Offroad equipment Sources

During irregular maintenance, the project may require the movement or replacement of battery enclosures during the lifetime of the project. As such, the use of a crane was assumed to assist the lifting and movement of the BESS containers. CalEEMod was used to estimate emissions of the crane assuming 1 day of operation every 5 years.

Mobile Sources

Following the completion of construction activities, the Project would generate criteria pollutant emissions from mobile sources (vehicular traffic) as a result of the periodic maintenance of the Project. The Project was assumed to require up to 12 employees visiting the site for maintenance twice per month. The estimated trip lengths and trip modes were based on CalEEMod defaults. CalEEMod was used to estimate emissions from proposed vehicular sources (refer to Attachment A). CalEEMod default data, including temperature, trip characteristics, variable start information, emissions factors, and trip distances, were conservatively used for the model inputs. Project-related traffic was assumed to include a mixture of vehicles in accordance with the associated use, as modeled within CalEEMod, which is based on the California Air Resources Board (CARB) EMFAC2021 model. Emission factors representing the vehicle mix and emissions for 2025 were used to estimate emissions associated with vehicular sources.

3 Air Quality Assessment

3.1 Thresholds of Significance

The State of California has developed guidelines to address the significance of air quality impacts based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.). In addition, Appendix G of the CEQA Guidelines indicates that where available, the significance criteria established by the applicable air district may be relied on to determine whether the Project would have a significant impact on air quality. This analysis focuses on addressing the potential for the Project to violate any air quality standard or contribute substantially to an existing or projected air quality violation, which is determined by comparing estimated Project-generated construction and operational emissions to numeric thresholds established by SCAQMD.

SCAQMD has adopted thresholds to address the significance of air quality impacts resulting from a project. A project would result in a substantial contribution to an existing air quality violation of the National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards (CAAQS) for O₃, which is a nonattainment pollutant, if the project's construction emissions would exceed SCAQMD's VOC or NO_x significance thresholds shown in Table 2. These emission-based thresholds for O₃ precursors are intended to serve as a surrogate for an "ozone significance threshold" (i.e., the potential for adverse O₃ impacts to occur) because O₃ itself is not emitted directly, and the effects of an individual project's emissions of O₃ precursors (VOC and NO_x) on O₃ levels in ambient air cannot be determined through air quality models or other quantitative methods. The SCAB is also nonattainment for the state PM₁₀ and federal and state PM_{2.5} standards.

Table 2. SCAQMD Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds		
Pollutant	Construction (Pounds per Day)	Operation (Pounds per Day)
VOCs	75	55
NO _x	100	55
CO	550	550
SO _x	150	150
PM ₁₀	150	150
PM _{2.5}	55	55
Lead ^a	3	3
TACs and Odor Thresholds		
TACs ^b	Maximum incremental cancer risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic and acute hazard index ≥ 1.0 (project increment)	

Table 2. SCAQMD Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds		
Pollutant	Construction (Pounds per Day)	Operation (Pounds per Day)
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality Standards for Criteria Pollutants ^c		
NO ₂ 1-hour average NO ₂ annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.030 ppm (state) and 0.0534 ppm (federal)	
CO 1-hour average CO 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state /federal)	
PM ₁₀ 24-hour average	10.4 µg/m ³ (construction) ^d	
PM ₁₀ annual average	2.5 µg/m ³ (operation) 1.0 µg/m ³	
PM _{2.5} 24-hour average	10.4 µg/m ³ (construction) ^d 2.5 µg/m ³ (operation)	

Source: SCAQMD 2023.

Notes: SCAQMD = South Coast Air Quality Management District; VOCs = volatile organic compounds; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM₁₀ = coarse particulate matter; PM_{2.5} = fine particulate matter; TAC = toxic air contaminant; NO₂ = nitrogen dioxide; ppm = parts per million; µg/m³ = micrograms per cubic meter.

GHG emissions thresholds for industrial proposed projects, as added in the March 2015 revision to the SCAQMD Air Quality Significance Thresholds, were not included in Table 1 as they will be addressed within the GHG emissions analysis and not the air quality study.

^a The phaseout of leaded gasoline started in 1976. Since gasoline no longer contains lead, the Project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.

^b TACs include carcinogens and non-carcinogens.

^c Ambient air quality standards for criteria pollutants are based on SCAQMD Rule 1303, Table A-2, unless otherwise stated.

^d Ambient air quality threshold are based on SCAQMD Rule 403.

In addition to the emission-based thresholds listed in Table 1, SCAQMD also recommends the evaluation of localized air quality impacts to sensitive receptors in the immediate vicinity of the Project as a result of construction activities. Such an evaluation is referred to as a localized significance threshold (LST) analysis. The LST analysis focuses on construction equipment and does not include mobile sources. Therefore, the LST analysis only applies to the construction equipment on site, not the worker vehicles or vendor trucks. For project sites of 5 acres or less, the SCAQMD LST Methodology (2009) includes lookup tables that can be used to determine the maximum allowable daily emissions that would satisfy the localized significance criteria (i.e., the emissions would not cause an exceedance of the applicable concentration limits for NO₂, CO, PM₁₀, and PM_{2.5}) without performing Project-specific dispersion modeling.

The LST significance thresholds for NO₂ and CO represent the allowable increase in concentrations above background levels in the vicinity of a project that would not cause or contribute to an exceedance of the relevant ambient air quality standards, while the threshold for PM₁₀ represents compliance with Rule 403 (Fugitive Dust). The LST significance threshold for PM_{2.5} is intended to ensure that construction emissions do not contribute

substantially to existing exceedances of the PM_{2.5} ambient air quality standards. The allowable emission rates depend on the following parameters:

- Source-receptor area (SRA) in which the Project is located
- Size of the Project Site
- Distance between the Project Site and the nearest sensitive receptor (e.g., residences, schools, hospitals)

The Project Site is located in SRA 24 (Perris Valley). LST pollutant screening level concentration data is currently published for 1-, 2-, and 5-acre sites for varying distances. In accordance with the SCAQMD *Fact Sheet for Applying CalEEMod to Localized Significance Thresholds* (SCAQMD n.d.), the project would disturb a maximum of 2-acres during the grading phase. The nearest sensitive-receptor land use (a residence) is located north of the project site across Case Road and California State Route 74, approximately 920 feet from the Project Site boundary. As such, the LST receptor distance was assumed to be 656 feet (200 meters), the nearest threshold for which SCAQMD provides LST threshold values. The LST values from the SCAQMD lookup tables for SRA 24 (Perris Valley) for a 2-acre project site and a receptor distance of 100 meters are shown in Table 3.

Table 3. Localized Significance Thresholds for Source-Receptor Area 24 (Perris Valley)

Pollutant	Threshold (pounds/day)
Construction	
NO ₂	379
CO	5,136
PM ₁₀	75
PM _{2.5}	23

Source: SCAQMD 2009.
Notes: NO₂ = nitrogen dioxide; CO = carbon monoxide; PM₁₀ = coarse particulate matter; PM_{2.5} = fine particulate matter
Localized significance thresholds were determined based on the values for a 2-acre site at a distance of 200 meters (656 feet) from the nearest sensitive receptor.

3.2 Impact Analysis

3.2.1 Would the project conflict with or obstruct implementation of the applicable air quality plan?

The Project Site is located within the SCAB, which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties and all of Orange County, and is within the jurisdictional boundaries of SCAQMD.

SCAQMD administers SCAB’s Air Quality Management Plan (AQMP), which is a comprehensive document outlining an air pollution control program for attaining all CAAQS and NAAQS. The most recent adopted AQMP for the SCAB is the 2022 AQMP (SCAQMD 2022), which was adopted by SCAQMD’s Governing Board in December 2022. The 2022 AQMP builds on measures already enacted in previous AQMPs, focusing on the accelerated deployment of available cleaner technologies (e.g., zero emissions technologies, low NO_x technologies) when cost-effective and feasible, while seeking to achieve multiple goals in partnership with other entities promoting reductions in GHGs and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2022).

The purpose of a consistency finding with regard to the AQMP is to determine if a project is consistent with the assumptions and objectives of the regional air quality plans, and if it would interfere with the region's ability to comply with federal and state air quality standards. SCAQMD has established criteria for determining consistency with the currently applicable AQMP in Chapter 12, Sections 12.2 and 12.3 of the SCAQMD CEQA Air Quality Handbook. These criteria are (SCAQMD 1993):

- Whether the Project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP.
- Whether the Project would exceed the assumptions in the AQMP or increments based on the year of Project buildout and phase.

To address the first criterion, Project-generated criteria air pollutant emissions have been estimated and analyzed for significance and are addressed under Section 3.2.2. Detailed results of this analysis are included in Attachment A, CalEEMod Emissions Outputs. As presented in Section 3.2.2, construction and operation of the Project would not generate criteria air pollutant emissions that exceed SCAQMD's thresholds.

The second criterion regarding the Project's potential to exceed the assumptions in the AQMP or increments based on the year of Project buildout and phase is primarily assessed by determining consistency between the Project's land use designations and its potential to generate population growth. In general, projects are considered consistent with, and not in conflict with or obstructing implementation of, the AQMP if the growth in socioeconomic factors is consistent with the underlying regional plans used to develop the AQMP (per Consistency Criterion No. 2 of the SCAQMD CEQA Air Quality Handbook). SCAQMD primarily uses demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by the Southern California Association of Governments (SCAG) for its Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (SCAG 2020). This document, which is based on general plans for cities and counties in the SCAB, is used by SCAQMD to develop the AQMP emissions inventory (SCAQMD 2020).² The SCAG 2020 RTP/SCS and the associated Regional Growth Forecast are generally consistent with the local plans; therefore, the 2022 AQMP is generally consistent with local government plans.

The Project site has a zoning designation of Specific Plan (Menifee Specific Plan No. 260) that allows industrial uses including Battery Energy Storage Systems (BESS) and public utility substations. The Project is consistent with the existing land use designation and does not propose a change in land use designation. In addition, the implementation of the Project would not generate an increase in growth demographics that would conflict with existing projections within the region. Accordingly, the Project is consistent with the SCAG RTP/SCS forecasts used in the SCAQMD AQMP development.

² Information necessary to produce the emissions inventory for the SCAB is obtained from SCAQMD and other governmental agencies, including the California Air Resources Board (CARB), California Department of Transportation (Caltrans), and SCAG. Each of these agencies is responsible for collecting data (e.g., industry growth factors, socioeconomic projections, travel activity levels, emission factors, emission speciation profile, and emissions) and developing methodologies (e.g., model and demographic forecast improvements) required to generate a comprehensive emissions inventory. SCAG incorporates these data into its Travel Demand Model for estimating/projecting vehicle miles traveled and driving speeds. SCAG's socioeconomic and transportation activities projections in their 2020 RTP/SCS are integrated in the 2022 AQMP (SCAQMD 2022).

In summary, based on the considerations presented for the two criteria, impacts relating to the Project’s potential to conflict with or obstruct implementation of the applicable AQMP would be less than significant.

3.2.2 Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and SCAQMD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, Project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project’s individual emissions would have a cumulatively significant impact on air quality.

Construction Emissions

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC off-gassing) and off-site sources (i.e., on-road vendor trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity; the specific type of operation; and, for particulate matter, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated.

The CalEEMod Version 2022.1 was used to estimate emissions from construction of the Project. Internal combustion engines used by construction equipment, trucks, and worker vehicles would result in emissions of VOCs, NO_x, CO, PM₁₀, and PM_{2.5}. PM₁₀ and PM_{2.5} emissions would also be generated by entrained dust, which results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil. Table 4 presents the estimated maximum daily construction emissions generated during construction of the Project. Details of the emission calculations are provided in Attachment A.

Table 4. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions - Unmitigated

Year	VOC	NOx	CO	SOx	PM ₁₀	PM _{2.5}
	pounds per day					
2024	18.95	169.85	188.25	0.32	9.37	6.79
2025	16.92	154.02	180.78	0.32	8.02	5.79
2055*	1.59	9.71	15.98	0.05	4.34	2.26
Maximum	18.95	169.85	188.25	0.32	9.37	6.79
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	No	Yes	No	No	No	No

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM₁₀ = coarse particulate matter; PM_{2.5} = fine particulate matter; SCAQMD = South Coast Air Quality Management District. Emissions include compliance with SCAQMD Rule 403. See Attachment A for complete results.
*Caleemod only provides off-road emission factors up to 2050.

As shown in Table 4, the Project construction would exceed SCAQMD’s daily thresholds for NOx emissions. Therefore, criteria air pollutant emissions would be potentially significant and mitigation would be required. Mitigation measure AQ-1 would be required to reduce impacts related to NOx emissions during construction of the project.

MM-AQ-1: **Construction Equipment Emissions Reductions.** The following measure shall be incorporated into the project to reduce construction criteria air pollutant emissions, including VOC, NOx, CO, PM₁₀, and PM_{2.5}, generated by construction equipment used for the project. Prior to the issuance of a grading permit, the following shall be incorporated into the grading plan and/or grading permit conditions:

- For off-road equipment with engines rated at 75 horsepower or greater, no construction equipment shall be used that is less than Tier 4 final. An exemption from these requirements may be granted in the event that the developer documents that equipment with the required tier is not reasonably available and corresponding reductions in criteria air pollutant emissions are achieved from other construction equipment³.
- Before an exemption may be considered, the developer shall be required to demonstrate that two construction fleet owners/operators in the region were contacted and that those owners/operators confirmed Tier 4 final or better equipment could not be located in the region. To ensure that Tier 4 construction equipment or better would be used during the project’s construction, the developer will include this requirement in applicable bid documents, purchase orders, and contracts. Successful contractor(s) must demonstrate the ability to supply the compliant construction equipment for use prior to any ground disturbing and construction activities. A copy of each unit’s certified tier specification or model year specification and CARB or SCAQMD operating permit (if applicable) shall be available upon request at the time of mobilization of each applicable unit of equipment.

Implementation of **MM-AQ-1** would reduce project construction-generated NOx emissions to the extent feasible. The criteria air pollutant emissions after incorporation of **MM-AQ-1** are presented in Table 5.

Table 5. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions - Mitigated

Year	VOC	NOx	CO	SOx	PM ₁₀	PM _{2.5}
	pounds per day					
2024	10.73	74.65	200.20	0.32	5.35	3.13
2025	9.70	72.01	196.48	0.32	4.75	2.82
2055*	1.59	9.71	15.98	0.05	4.34	2.26
Maximum	10.73	74.65	200.20	0.32	5.35	3.13
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No

³ For example, if a Tier 4 Interim piece of equipment is not reasonably available at the time of construction and a lower tier equipment is used instead (e.g., Tier 3), another piece of equipment could be upgraded from a Tier 4 Interim to a higher tier (i.e., Tier 4 Final) or replaced with an alternative-fueled (not diesel-fueled) equipment to offset the emissions associated with using a piece of equipment that does not meet Tier 4 Interim standards.

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM₁₀ = coarse particulate matter; PM_{2.5} = fine particulate matter; SCAQMD = South Coast Air Quality Management District.

Emissions include compliance with SCAQMD Rule 403.

See Attachment A for complete results.

*Caleemod only provides off-road emission factors up to 2050.

As shown in Table 5, daily construction emissions would not exceed the SCAQMD significance thresholds for VOC, NO_x, CO, SO_x, PM₁₀, or PM_{2.5} during Project construction, and short-term construction impacts would be **less than significant with mitigation**.

Operational Emissions

Emissions from the operational phase of the Project were estimated using CalEEMod. Operational year 2025 was assumed in accordance with the schedule provided by the project applicant. Table 6 presents the emissions during operation.

Table 6. Estimated Maximum Daily Operation Criteria Air Pollutant Emissions

Emissions Source	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
	Pounds per Day					
Area	<0.01	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.14	0.03	0.23	<0.01	<0.01	<0.01
Offroad	0.23	2.20	2.08	0.01	0.09	0.09
Stationary	0.43	1.19	1.09	0.00	0.06	0.06
Total	0.79	3.43	3.40	<0.01	0.16	0.15
SCAQMD Threshold	55	55	550	150	150	55
<i>Threshold Exceeded?</i>	No	No	No	No	No	No

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM₁₀ = coarse particulate matter; PM_{2.5} = fine particulate matter; SCAQMD = South Coast Air Quality Management District.

See Attachment A for complete results. Columns may not add due to rounding.

As shown in Table 6, the Project would not exceed SCAQMD's significance thresholds during operations. Therefore, operational impacts associated with criteria air pollutant emissions would be less than significant.

In considering cumulative impacts from the Project, the analysis must specifically evaluate a Project's contribution to the cumulative increase in pollutants for which the SCAB is designated as nonattainment for the CAAQS and NAAQS. If a Project's emissions would exceed SCAQMD's significance thresholds, it would be considered to have a cumulatively considerable contribution to nonattainment status in the SCAB. If a project does not exceed thresholds and is determined to have less than significant Project-specific impacts, it may still contribute to a significant cumulative impact on air quality. The basis for analyzing the Project's cumulatively considerable contribution is if the Project's contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact) and consistency with SCAQMD's 2016 AQMP, which addresses cumulative emissions in the SCAB.

The SCAB has been designated as a federal nonattainment area for O₃ and PM_{2.5} and a state nonattainment area for O₃, PM₁₀, and PM_{2.5}. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SCAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction of the Project would generate VOC and NO_x emissions (which are precursors to O₃) and emissions of PM₁₀ and PM_{2.5}. As indicated in Tables 5 and 6, Project-generated construction and operational emissions would not exceed SCAQMD's emission-based significance thresholds for VOC, NO_x, CO, SO₂, PM₁₀, or PM_{2.5}.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site project. Construction schedules for potential future projects near the Project Site are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be speculative.⁴ However, future projects would be subject to CEQA and would require an air quality analysis and, where necessary, mitigation if the Project would exceed SCAQMD's significance thresholds. Criteria air pollutant emissions associated with construction activity of future proposed projects would be reduced through implementation of control measures required by SCAQMD. Cumulative PM₁₀ and PM_{2.5} emissions would be reduced because all future projects would be subject to SCAQMD Rule 403 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the SCAQMD.

Based on the previous considerations, the Project would not result in a cumulatively considerable increase in emissions of nonattainment pollutants, and cumulative impacts would be less than significant with mitigation.

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

Localized Significance Thresholds

Sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. People most likely to be affected by air pollution include children, the elderly, and people with cardiovascular and chronic respiratory diseases. According to SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993). Residential land uses are located to the north and southwest of the Project. The nearest sensitive-receptor land use (a residence) is located north of the project site across Case Road and California State Route 74, approximately 920 feet from the Project Site boundary.

Construction activities associated with the Project would result in temporary sources of on-site fugitive dust and construction equipment emissions. Off-site emissions from vendor trucks and worker vehicle trips are not included in the LST analysis. The maximum allowable daily emissions that would satisfy the SCAQMD localized significance criteria for SRA 24 are presented in Table 7 and compared to the maximum daily on-site construction emissions.

⁴ The CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145). This discussion is nonetheless provided in an effort to show good-faith analysis and to comply with CEQA's information disclosure requirements.

Table 7. Localized Significance Thresholds Analysis for Project Construction

Pollutant	Project Construction Emissions (Pounds per Day)	LST Criteria (Pounds per Day)	Exceeds LST?
NO ₂	169.84	379	No
CO	188.25	5,136	No
PM ₁₀	9.37	75	No
PM _{2.5}	6.79	23	No

Source: SCAQMD 2009.

Notes: LST = localized significance threshold; NO₂ = nitrogen dioxide; CO = carbon monoxide; PM₁₀ = coarse particulate matter; PM_{2.5} = fine particulate matter.

See Attachment A for detailed results.

LSTs are shown for 2-acre project sites corresponding to a distance to a sensitive receptor of 200 meters (656 feet) for SRA 24.

These estimates reflect control of fugitive dust required by Rule 403.

The emissions represent worst-case operating scenario during construction.

As shown in Table 7, the Project LST would not exceed the established significance thresholds, and thus, would result in a less than significant localized impact to sensitive receptors during construction.

CO Hotspots

Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed federal and/or state standards for CO are termed CO “hotspots.” CO transport is extremely limited and disperses rapidly with distance from the source. Under certain extreme meteorological conditions, however, CO concentrations near a congested roadway or intersection may reach unhealthy levels affecting sensitive receptors. Typically, high CO concentrations are associated with severely congested intersections operating at an unacceptable level of service (LOS) (LOS E or worse is unacceptable). Projects contributing to adverse traffic impacts may result in the formation of a CO hotspot. Additional analysis of CO hotspot impacts would be conducted if a project would result in a significant impact or contribute to an adverse traffic impact at a signalized intersection that would potentially subject sensitive receptors to CO hotspots.

Title 40 of the Code of Federal Regulations, Section 93.123(c)(5), Procedures for Determining Localized CO, PM₁₀, and PM_{2.5} Concentrations (Hot-Spot Analysis), states that “CO, PM₁₀, and PM_{2.5} hot-spot analyses are not required to consider construction-related activities, which cause temporary increases in emissions. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site” (40 CFR 93.123). While Project construction would involve on-road vehicle trips from trucks and workers during construction, construction activities would last approximately 12 months and would not require a Project-level construction hotspot analysis.

Mobile source impacts occur on two scales of motion. Regionally, Project-related travel would add to regional trip generation and increase the vehicle miles traveled within the local airshed and the SCAB. Locally, Project-generated traffic would be added to the City’s roadway system near the Project Site. If such traffic occurs during periods of poor atmospheric ventilation, is composed of many vehicles cold-started and operating at pollution-inefficient speeds, or is operating on roadways already crowded with non-Project traffic, there is a potential for the formation of microscale CO hotspots in the area immediately around points of congested traffic. Because of continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SCAB is steadily decreasing.

Projects contributing to adverse traffic impacts may result in the formation of CO hotspots. As the project would not generate regular traffic, only during periodic maintenance on a monthly basis, the Project would not create a CO hotspot during operation.

Accordingly, the Project would not generate traffic that would contribute to potential adverse traffic impacts that may result in the formation of CO hotspots. In addition, due to continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SCAB is steadily decreasing. Based on these considerations, the Project would result in a less than significant impact to air quality with regard to potential CO hotspots.

Toxic Air Contaminants

A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute (immediate) and/or chronic (cumulative) non-cancer health effects. A toxic substance released into the air is considered a toxic air contaminant (TAC). Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

TACs are identified by federal and state agencies based on a review of available scientific evidence. In the state of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics “Hot Spots” Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere.

Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

A health risk assessment (HRA) was performed for construction of the project, as discussed below is presented in Attachment B. The most recent guidance from the Office of Environmental Health Hazard Assessment (OEHHA) is the 2015 Risk Assessment Guidelines Manual (OEHHA 2015), which was adopted in 2015 to replace the 2003 HRA Guidance Manual. The Children’s Environmental Health Protection Act of 1999 (Senate Bill 25), which requires explicit consideration of infants and children in assessing risks from air toxics, required revisions of the methods for both non-cancer and cancer risk assessment and of the exposure assumptions in the 2003 HRA Guidance Manual. Cancer risk parameters, such as age-sensitivity factors, daily breathing rates, exposure period, fraction of time at home, and cancer potency factors were based on the values and data recommended by OEHHA as implemented in HARP2. SCAQMD’s Modeling Guidance for American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) (SCAQMD 2018) and Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis (SCAQMD 2003c) provide guidance to perform dispersion modeling for use in HRAs within the SCAB.

Health effects from carcinogenic air toxics are usually described in terms of cancer risk. The SCAQMD recommends a carcinogenic (cancer) risk threshold of 10 in one million. Some TACs increase noncancer health risk due to long-term (chronic) exposures. The Chronic Hazard Index (HIC) is the sum of the individual substance chronic hazard indices for all TACs affecting the same target organ system. The HIC estimates for all receptor types used the OEHHHA-derived calculation method, which uses high end exposure parameters for the inhalation and next top two exposure pathways and mean exposure parameters for the remaining pathways for non-cancer risk estimates. The HIC is the sum of the individual substance chronic hazard indices for all TACs affecting the same target organ system.⁵ A hazard index less than 1.0 means that adverse health effects are not expected. Within this analysis, noncarcinogenic exposures of less than 1.0 are considered less than significant. The SCAQMD recommends a HIC significance threshold of 1.0 (project increment) and an acute hazard index of 1.0.

The greatest potential for TAC exposure from project construction and operation is from diesel particulate matter (DPM), as the exhaust from diesel engines is a complex mixture of gases, vapors, and particles, many of which are known human carcinogens. DPM has established cancer risk factors and relative exposure values for long-term chronic health hazard impacts. No short-term, acute relative exposure values are established and regulated and therefore these are not addressed in this assessment.

The dispersion modeling was performed using AERMOD, which is the model SCAQMD requires for atmospheric dispersion of emissions. AERMOD (Version 21112) is a steady-state Gaussian plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of surface and elevated sources, building downwash, and simple and complex terrain (EPA 2018a).

For risk assessment purposes, PM₁₀ in diesel exhaust is considered DPM, originating mainly from off-road equipment operating at a defined location for a given length of time at a given distance from sensitive receptors. Less-intensive, more-dispersed emissions result from on road vehicle exhaust (e.g., heavy-duty diesel trucks). For the construction HRA, the CalEEMod scenario for the project was adjusted to reduce diesel truck one-way trip distances to 1,000 feet (0.19 miles) to estimate emissions from truck pass-by at proximate receptors.

The air dispersion modeling methodology was based on generally accepted modeling practices of SCAQMD (SCAQMD 2021a). Air dispersion modeling was performed using the EPA's American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) Version 21112 modeling system (computer software) with the Lakes Environmental Software implementation/user interface, AERMOD View Version 11.2. The HRA followed the Office of Environmental Health Hazard Assessment (OEHHHA) 2015 guidelines (OEHHHA 2015) and SCAQMD guidance to calculate the health risk impacts at all proximate receptors as further discussed below. The dispersion modeling included the use of standard regulatory default options. AERMOD parameters were selected consistent with the SCAQMD and EPA guidance and identified as representative of the project site and project activities. Principal parameters of this modeling are presented in Table 3.3-6.

⁵ The HIC estimates for all receptor types used the OEHHHA-derived calculation method (OEHHHA 2015).

Table 3.3-6. American Meteorological Society/Environmental Protection Agency Regulatory Model Principal Parameters

Parameter	Details
Meteorological Data	AERMOD-specific meteorological data for the Peris air monitoring station (PERI) was used for the dispersion modeling (SCAQMD 2023). A 4-year meteorological data set from 2017 through 2021 was obtained from the SCAQMD in a preprocessed format suitable for use in AERMOD.
Urban versus Rural Option	Urban dispersion option was selected due to the developed nature of the project area and per SCAQMD guidelines.
Terrain Characteristics	The elevation of the site is 1,450 feet (442 meters) above sea level.
Elevation Data	Digital elevation data were imported into AERMOD and elevations were assigned to receptors and emission sources, as necessary. Digital elevation data were obtained through the AERMOD View in the United States Geological Survey's National Elevation Dataset format with a resolution of 1 arc-second resolution, consistent with the SCAQMD guidance (SCAQMD 2022a).
Source Release Characterizations	Air dispersion modeling of DPM emissions was conducted assuming the off-road equipment would operate in accordance with the modeling scenario estimated in CalEEMod (Attachment A). The construction equipment and on-site truck travel DPM emissions were modeled as a line of adjacent volume sources across the project site to represent project construction with release heights of 5 meters, plume heights of 10 meters, and plume widths of 10 meters (SCAQMD 2008).

Note: AERMOD = American Meteorological Society/Environmental Protection Agency Regulatory Model; SCAQMD = South Coast Air Quality Management District; DPM = diesel particulate matter; CalEEMod = California Emissions Estimator Model. See Attachment A.

Discrete receptors were placed over the residential receptors closest to the site. The health risk calculations were performed using the Hotspots Analysis and Reporting Program Version 2 (HARP2) Air Dispersion and Risk Tool (ADMRT, dated 22118). AERMOD was run with all sources emitting unit emissions (1 gram per second) to obtain the necessary input values for HARP2. The line of volume sources was partitioned evenly based on the 1 gram per second emission rate. The ground-level concentration plot files were then used to estimate the long-term cancer health risk to an individual, and the non-cancer chronic health indices. There is no reference exposure level (REL) for acute health impacts from DPM, and, thus, acute risk was not evaluated.

Cancer risk is defined as the increase in probability (chance) of an individual developing cancer due to exposure to a carcinogenic compound, typically expressed as the increased chances in one million. Maximum Individual Cancer Risk is the estimated probability of a maximally exposed individual potentially contracting cancer as a result of exposure to TACs over a period of 30 years for residential receptor locations. For the purposes of this construction HRA, given the less-than-lifetime exposure period, and the higher breathing rates and sensitivity of children to TACs, the cancer risk calculation assumes that the exposure would affect children early in their lives. The 12-month exposure duration was assumed to start during the third trimester of pregnancy through 12 months of age based on the duration of construction. The exposure pathway for DPM is inhalation only.

The SCAQMD has also established non-carcinogenic risk parameters for use in HRAs since some TACs increase non-cancer health risk due to long-term (chronic) exposures and some TACs increase non-cancer health risk due to short-term (acute) exposures. No short-term, acute relative exposure level has been established for DPM; therefore,

acute impacts of DPM are not addressed in the HRA. Chronic exposure is evaluated in the construction HRA. Non-carcinogenic risks are quantified by calculating a hazard index, expressed as the ratio between the ambient pollutant concentration and its toxicity or REL, which is a concentration at or below which health effects are not likely to occur. The chronic hazard index is the sum of the individual substance chronic hazard indices for all TACs affecting the same target organ system. A hazard index less of than one (1.0) means that adverse health effects are not expected.

The Maximum Individual Cancer Risk and the Chronic Hazard Index for residential receptors as a result of project construction are presented in Table 3.3-7.

Table 3.3-7. Construction Health Risk Assessment Results - Unmitigated

Impact Parameter	Units	Project Impact	CEQA Threshold	Level of Significance
Maximum Individual Cancer Risk–Residential	Per Million	6.88	10	Less than Significant
Chronic Hazard Index–Residential	Index Value	0.008	1.0	Less than Significant

Source: SCAQMD 2019.

Notes: CEQA = California Environmental Quality Act.

See Attachment B.

As shown in Table 3.3-7, project construction activities would result in a Residential Maximum Individual Cancer Risk of 6.88 in 1 million, which would not exceed the significance threshold of 10 in 1 million. Project construction would result in a Residential Chronic Hazard Index of 0.008 which is below the 1.0 significance threshold. Implementation of MM-AQ-1 would further reduce project construction-generated DPM missions. The HRA results after incorporation of MM-AQ-1 are presented in Table 3.3-8.

Table 3.3-8. Construction Health Risk Assessment Results - Mitigated

Impact Parameter	Units	Project Impact	CEQA Threshold	Level of Significance
Maximum Individual Cancer Risk–Residential	Per Million	1.00	10	Less than Significant
Chronic Hazard Index–Residential	Index Value	0.001	1.0	Less than Significant

Source: SCAQMD 2019.

Notes: CEQA = California Environmental Quality Act.

See Attachment B

As shown in table 3.3-8, Implementation of MM-AQ-1 would reduce construction-generated health. Thus, impacts would be less than significant.

Health Impacts of Criteria Air Pollutants

Construction of the Project would generate criteria air pollutant emissions; however, the Project would not exceed the SCAQMD mass-emission thresholds after implementation of MM-AQ-1.

The SCAB is designated as nonattainment for O₃ for the NAAQS and CAAQS. Thus, existing O₃ levels in the SCAB are at unhealthy levels during certain periods. The health effects associated with O₃ generally relate to reduced lung function. Because the Project would not involve construction activities that would result in O₃ precursor emissions

(VOC or NO_x) that would exceed the SCAQMD thresholds after implementation of MM-AQ-1, the Project is not anticipated to substantially contribute to regional O₃ concentrations and associated health impacts. Similar to construction, no SCAQMD threshold would be exceeded during operation.

In addition to O₃, NO_x emissions contribute to potential exceedances of the NAAQS and CAAQS for NO₂ (since NO₂ is a constituent of NO_x). Exposure to NO₂ can cause lung irritation, bronchitis, and pneumonia, and lower resistance to respiratory infections. As depicted in Table 7, Project construction would not exceed the SCAQMD localized thresholds for NO₂. Thus, NO_x emissions during construction of the Project are not expected to exceed the NO₂ standards or contribute to associated health effects.

CO tends to be a localized impact associated with congested intersections. CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. CO hotspots were discussed previously as a less than significant impact. Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

The SCAB is designated as nonattainment for PM₁₀ under the CAAQS and nonattainment for PM_{2.5} under the NAAQS and CAAQS. Particulate matter contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing (US Environmental Protection Agency [EPA] 2016). As with O₃ and NO_x, the Project would not generate emissions of PM₁₀ or PM_{2.5} that would exceed SCAQMD's LSTs. Accordingly, the Project's PM₁₀ and PM_{2.5} emissions are not expected to cause any increase in related regional health effects for these pollutants.

In summary, the Project would not result in any potentially significant contribution to local or regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants. Impacts would be less than significant with mitigation.

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

The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the Project. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment and asphalt pavement application. Such odors would disperse rapidly from the Project Site and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be less than significant.

Land uses and industrial operations associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting operations, refineries, landfills, dairies, and

fiberglass molding facilities (SCAQMD 1993). The Project would not create any new sources of odor during operation. Therefore, Project operations would result in an odor impact that is less than significant.

4 Greenhouse Gas Emissions Assessment

4.1 Thresholds of Significance

The significance criteria used to evaluate the proposed project's GHG emissions impacts is based on the recommendations provided in Appendix G of the CEQA Guidelines. For the purposes of this GHG emissions analysis, the proposed project would have a significant environmental impact if it would (14 CCR 15000 et seq.):

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

Global climate change is a cumulative impact; a project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHGs. There are currently no established thresholds for assessing whether the GHG emissions of a project, such as the proposed project, would be considered a cumulatively considerable contribution to global climate change; however, all reasonable efforts should be made to minimize a project's contribution to global climate change. In addition, while GHG impacts are recognized exclusively as cumulative impacts (CAPCOA 2008), GHG emissions impacts must also be evaluated on a project-level under CEQA.

The CEQA Guidelines do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009). The State of California has not adopted emission-based thresholds for GHG emissions under CEQA. The Governor's Office of Planning and Research's Technical Advisory, titled "Discussion Draft CEQA and Climate Change Advisory," states:

"Neither the CEQA statute nor the CEQA Guidelines prescribe thresholds of significance or particular methodologies for performing an impact analysis. This is left to lead agency judgment and discretion, based upon factual data and guidance from regulatory agencies and other sources where available and applicable. Even in the absence of clearly defined thresholds for GHG emissions, such emissions must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact." (OPR 2018)

The advisory document indicates that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice." Section 15064.7(c) of the CEQA Guidelines specifies that "when adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence."

Amendments to Section 15064.4 of the CEQA Guidelines were adopted to assist lead agencies in determining the significance of the impacts of GHG emissions. Section 15064.4 specifies that a lead agency “shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project.” Section 15064.4 also provides lead agencies with the discretion to determine whether to assess those emissions quantitatively or to rely on a qualitative analysis or performance-based standards. In addition, the CEQA Guidelines specify that “[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence” (14 CCR 15064.7(c)).

The State CEQA Guidelines do not indicate an amount of GHG emissions that constitutes a significant impact on the environment. Instead, they authorize the lead agency to consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence (State CEQA Guidelines Sections 15064.4(a) and 15064.7(c)).

In October 2008, the SCAQMD proposed recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects as presented in its Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold (SCAQMD 2008). This guidance document, which builds on the previous guidance prepared by the California Air Pollution Control Officers Association, explored various approaches for establishing a significance threshold for GHG emissions. The draft interim CEQA thresholds guidance document was not adopted or approved by the Governing Board. However, in December 2008, the SCAQMD adopted an interim 10,000 MT CO_{2e} per-year screening level threshold for stationary source/industrial projects for which the SCAQMD is the lead agency (see SCAQMD Resolution No. 08-35, December 5, 2008).

The SCAQMD formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines are established. From December 2008 to September 2010, the SCAQMD hosted working group meetings and revised the draft threshold proposal several times, although it did not officially provide these proposals in a subsequent document. The SCAQMD has continued to consider adoption of significance thresholds for residential and general land use development projects. The most recent proposal, issued in September 2010, uses the following tiered approach to evaluate potential GHG impacts from various uses (SCAQMD 2010):

- Tier 1** Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.
- Tier 2** Consider whether or not the proposed project is consistent with a locally adopted GHG reduction plan that has gone through public hearing and CEQA review, that has an approved inventory, includes monitoring, etc. If not, move to Tier 3.
- Tier 3** Consider whether the project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 MT CO_{2e} per year threshold for industrial uses would be recommended for use by all lead agencies. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO_{2e} per year), commercial projects (1,400 MT CO_{2e} per year), and mixed-use projects (3,000 MT CO_{2e} per year).

Under option 2, a single numerical screening threshold of 3,000 MT CO₂e per year would be used for all non-industrial projects. If the project generates emissions in excess of the applicable screening threshold, move to Tier 4.

Tier 4 Consider whether the project generates GHG emissions in excess of applicable performance standards for the project service population (population plus employment). The efficiency targets were established based on the goal of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 MT CO₂e/SP/year for project level analyses and 6.6 MT CO₂e/SP/year for plan level analyses. The 2035 efficiency targets are 3.0 MT CO₂e/SP/year for project level analyses and 4.1 MT CO₂e/SP/year for plan level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.

Tier 5 Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

To determine the Project's potential to generate GHG emissions that would have a significant impact on the environment, the Project's GHG emissions were estimated and then compared to the project quantitative threshold of 3,000 MT CO₂e per year under Tier 3, Option 1. Per the SCAQMD guidance, construction emissions should be amortized over the operational life of the Project, which is assumed to be 30 years (SCAQMD 2008). In addition, the Project was evaluated for its potential to conflict with various GHG emission reduction plans including CARB's Scoping Plan, SCAG's RTP/SCS, and statewide 2030, and 2045 GHG reduction targets identified in SB 32 and AB 1279.

4.2 Impact Analysis

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

Construction Emissions

Construction of the Project would result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road vendor trucks, and worker vehicles. The SCAQMD recommends that construction emissions be amortized over a 30-year project lifetime; therefore, the total construction GHG emissions were calculated, amortized over 30 years, and then added to the operational emissions below.

CalEEMod was used to estimate GHG emissions during construction. Construction of the Project is anticipated to last up to 12 months. On-site sources of GHG emissions include off-road equipment and off-site sources include on-road vehicles (vendor trucks and worker vehicles). Table 7 presents construction GHG emissions for the Project from on-site and off-site emission sources.

Table 7. Estimated Annual Construction GHG Emissions

	CO ₂	CH ₄	N ₂ O	CO ₂ e
Year	Metric Tons			
2024	2,178.93	0.09	0.04	2193.02
2025	1,160.61	0.05	0.02	1,168.2
2055	307.30	0.01	<0.01	308.33
Total				3,669.51
Annualized emissions over 30 years (metric tons per year)				122.32

Notes: CO₂ = carbon dioxide; CH₄ = methane; N₂O = nitrous oxide; CO₂e = carbon dioxide equivalent; GHG = greenhouse gas.
See Attachment A for complete results.

As shown in Table 7, the estimated total GHG emissions during construction of would be approximately 3,670 MT CO₂e. Estimated Project-generated construction emissions amortized over 30 years would be approximately 122 MT CO₂e per year. As with Project-generated construction air quality pollutant emissions, GHG emissions generated during construction of the Project would be short-term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions.

Operational Emissions

CalEEMod was used to estimate potential Project-generated operational GHG emissions from energy sources (natural gas and electricity), mobile sources, solid waste, and water supply and wastewater treatment. Emissions from each category are discussed in the following text with respect to the Project. For additional details, see Section 2.2 for a discussion of operational emission calculation methodology. Operational year 2025 was assumed as the first full year of operation. Table 8 presents the GHG emissions of the Project during operation.

Table 8. Estimated Annual Operation GHG Emissions

	CO ₂	CH ₄	N ₂ O	CO ₂ e
Emissions Source	Metric Tons per Year			
Mobile	34.04	<0.01	<0.01	34.61
Area	0.00	0.00	0.00	24.73 ¹
Energy	284.79	0.27	0.03	284.79
Water	2.26	<0.01	<0.01	2.27
Waste	0.11	0.01	<0.01	0.39
Off-Road Equipment	0.52	<0.01	<0.01	0.52
Stationary Equipment	4.95	<0.01	<0.01	4.97
Total				352.27
<i>Amortized construction emissions</i>				<i>122.32</i>
Total + Amortized Construction Emissions				474.59

Notes: CO₂ = carbon dioxide; CH₄ = methane; N₂O = nitrous oxide; CO₂e = carbon dioxide equivalent; SCAQMD = South Coast Air Quality Management District.

¹Accounts for SF₆ emissions.

See Attachment A for complete results.

As shown in Table 8, the estimated total GHG emissions during operation, including amortized construction emissions, of the Project would be approximately 475 MT CO₂e per year, which would not exceed the SCAQMD GHG threshold of 3,000 MT CO₂e per year. Therefore, the Project would not generate GHG emissions either directly or indirectly that may have a significant impact on the environment and impacts would be less than significant.

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

Potential to Conflict with the Connect SoCal (2024–2050 RTP/SCS)

SCAG’s Connect SoCal is a regional growth-management strategy that targets per capita GHG reduction from passenger vehicles and light-duty trucks in the Southern California region. The Connect SoCal incorporates local land use projections and circulation networks in city and county general plans. Typically, a project would not conflict with the RTP/SCS if the project does not exceed the underlying growth assumptions within the RTP/SCS.

Connect SoCal 2024 underlines four core categories—mobility, communities, environment, economy—each with its own set of goals. The major goals under the environment category of the Connect SoCal are outlined in Table 9, along with an overview of the Project’s consistency with the RTP/SCS goals.

Table 9. Project Potential to Conflict with the Connect SoCal (SCAG 2024–2050 RTP/SCS)

RTP/SCS Goal	Potential to Conflict
Environmental Goal 1: Sustainable Development	No Conflict. The 2024–2050 RTP/SCS identifies sustainable development, including water and energy-efficient building practices and green infrastructure, as a strategy to reduce GHG emissions. The Project would not result in an inefficient or wasteful use of natural resources and promotes sustainability on-site by allowing for increased energy storage from intermittent renewable energy sources, thereby increasing grid reliability and increasing the opportunity for renewable energy development.
Environmental Goal 2: Air Quality	No Conflict. The 2024–2050 RTP/SCS identifies air quality and meeting federal and state ambient air quality standards as a co-benefit of reducing GHG emissions. The Project would support increased energy storage from intermittent renewable energy sources, thereby increasing grid reliability and increasing the opportunity for renewable energy development.. Furthermore, the Project would not exceed the SCAQMD’s threshold of significance for any criteria air pollutant and would not result in any significant impacts related to air quality.
Environmental Goal 3: Clean Transportation	No Conflict. The 2024–2050 RTP/SCS identifies EV charging infrastructure, adoption of zero-emission vehicles, and clean transit as ways to reduce GHG emissions from mobile sources. The Project would not conflict with the goal of providing access to clean transportation
Environmental Goal 4: Natural and Agricultural Lands Preservation	No Conflict. The 2024–2050 RTP/SCS promotes the conservation and restoration of natural and agricultural lands through several policies, such as quantifying the carbon sequestration potential of natural and agricultural lands and prioritization of sensitive habitat and wildlife

**Table 9. Project Potential to Conflict with the Connect SoCal
(SCAG 2024-2050 RTP/SCS)**

RTP/SCS Goal	Potential to Conflict
	corridors for permanent protection. The Project is located on developed property and would not result in the removal of natural or agricultural lands.
Environmental Goal 5: Climate Resilience	No Conflict. The 2024-2050 RTP/SCS promotes regional coordination and solutions for effective emergency response for climate-related hazards. Additionally, in the category of climate resilience, SCAG has established the following policies: prioritize the most vulnerable populations and communities subject to climate hazards; support local and regional climate and hazard planning; support nature-based solutions to increase regional resilience; promote sustainable housing needs in a drier environment. While the Project does not directly address these climate resilience efforts, the Project would not interfere with this goal.

Source: SCAG 2024.

As shown in Table 9, the Project would not conflict with any of the environmental goals within SCAG’s Connect SoCal. Therefore, the Project would not conflict with the goal to improve air quality and GHG emissions in the region.

Consistency with CARB’s Scoping Plan

The California State Legislature passed the Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) to provide initial direction to limit California’s GHG emissions to 1990 levels by 2020 and initiate the state’s long-range climate objectives. Since the passage of AB 32, the State has adopted GHG emissions reduction targets for future years beyond the initial 2020 horizon year. For the Project, the relevant GHG emissions reduction targets include those established by Senate Bill 32 (SB 32) and AB 1279, which require GHG emissions be reduced to 40% below 1990 levels by 2030, and 85% below 1990 levels by 2045, respectively. In addition, AB 1279 requires the state achieve net zero GHG emissions by no later than 2045 and achieve and maintain net negative GHG emissions thereafter.

As defined by AB 32, CARB is required to develop The Scoping Plan, which provides the framework for actions to achieve the State’s GHG emission targets. The Scoping Plan is required to be updated every five years and requires CARB and other state agencies to adopt regulations and initiatives that will reduce GHG emissions statewide. The first Scoping Plan was adopted in 2008, and was updated in 2014, 2017, and most recently in 2022. While the Scoping Plan is not directly applicable to specific projects, nor is it intended to be used for project-level evaluations,⁶ it is the official framework for the measures and regulations that will be implemented to reduce California’s GHG emissions in alignment with the adopted targets. Therefore, a project would be found to not conflict with the statutes if it would meet the Scoping Plan policies and would not impede attainment of the goals therein.

The 2017 *Climate Change Scoping Plan Update* (Second Update) included measures to promote renewable energy and energy efficiency (including the mandates of SB 350), increase stringency of the Low Carbon Fuel Standard (LCFS), measures identified in the Mobile Source and Freight Strategies, measures identified in the proposed Short-Lived Climate Pollutant Plan, and increase stringency of SB 375 targets (CARB 2017). The 2022 *Scoping Plan for*

⁶ The Final Statement of Reasons for the amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that “[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan” (CNRA 2009).

Achieving Carbon Neutrality (Third Update) builds upon and accelerates programs currently in place, including moving to zero-emission transportation; phasing out use of fossil gas use for heating homes and buildings; reducing chemical and refrigerants with high GWP; providing communities with sustainable options for walking, biking, and public transit; and displacement of fossil-fuel fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines) (CARB 2022). Many of the measures and programs included in the Scoping Plan would result in the reduction of project-related GHG emissions with no action required at the project-level.

The 2045 carbon neutrality goal required CARB to expand proposed actions in the Third Update to include those that capture and store carbon in addition to those that reduce only anthropogenic sources of GHG emissions. However, the Third Update emphasizes that reliance on carbon sequestration in the state's natural and working lands will not be sufficient to address residual GHG emissions, and achieving carbon neutrality will require research, development, and deployment of additional methods to capture atmospheric GHG emissions (e.g., mechanical direct air capture). Given that the specific path to neutrality will require development of technologies and programs that are not currently known or available, the Project's role in supporting the statewide goal would be speculative and cannot be wholly identified at this time. Nonetheless, given that the Project is also not anticipated to result in substantial increase in operational GHG emission sources, including operational vehicle miles traveled, and would facilitate the state's transition to clean, renewable energy sources, the Project would not conflict with the Scoping Plan.

Overall, the Project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent applicable and required by law. The Project would not conflict with CARB's 2017 or 2022 Scoping Plan updates and with the state's ability to achieve the 2030 and 2045 GHG reduction and carbon neutrality goals and would support decarbonization of the energy sector.

5 Energy

5.1 Thresholds of Significance

The significant criteria used to evaluate the Project impacts to energy are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to energy would occur if the project would:

- a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation.
- b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.
- c) Result in cumulatively considerable energy impacts.

5.2 Impacts Analysis

5.2.1 Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Construction

Less-than-Significant Impact. The electricity and natural gas used for construction of the proposed project would be temporary, would be substantially less than that required for project operation, and would have a negligible contribution to the project's overall energy consumption. Although the project would see an increase in petroleum use during construction and operation, vehicles would use less petroleum due to advances in fuel economy and potential reduction in vehicle miles traveled (VMT) over time.

Electricity

Temporary electric power for as-necessary lighting and electronic equipment (such as computers inside temporary construction trailers) would be provided by Southern California Edison. The electricity used for such activities would be temporary, would be substantially less than that required for project operation, and would have a negligible contribution to the project's overall energy consumption.

Natural Gas

Natural gas is not anticipated to be required during construction of the project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed below under the Petroleum subsection. Any minor amounts of natural gas that may be consumed as a result of project construction would have a negligible contribution to the project's overall energy consumption.

Petroleum

Heavy-duty construction equipment associated with construction activities would rely on diesel fuel. Construction workers would travel to and from the project site throughout the duration of construction. It is assumed in this analysis that construction workers would travel to and from the site in gasoline-powered passenger vehicles.

Heavy-duty construction equipment of various types would be used during each phase of project construction. Attachment A lists the assumed equipment usage for each phase of construction.

Fuel consumption from construction equipment was estimated by converting the total carbon dioxide (CO₂) emissions from each construction phase to gallons using the conversion factors for CO₂ to gallons of gasoline or diesel. Construction is estimated to occur in 2024 and 2025 based on the construction phasing schedule. The conversion factor for gasoline is 8.78 kilograms per metric ton CO₂ per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO₂ per gallon (The Climate Registry 2023). The estimated diesel fuel usage from construction is shown in Table 9.

Table 9. Total Proposed Project Construction Petroleum Demand

Scenario	Off-Road Equipment (diesel)	Haul Trucks (diesel)	Vendor Trucks (diesel)	Worker Vehicles (gasoline)
	Gallons			
Project Construction	291,672	1,508	18,110	20,649
Total Petroleum Consumed for Project Construction				331,938

Source: Attachment A

In summary, construction of the project is anticipated to consume 20,649 gallons of gasoline and 311,290 gallons of diesel over the course of 12 months. The project will be subject to CARB’s In-Use Off-Road Diesel Vehicle Regulation that applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulation (1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; (2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; (3) restricts the adding of older vehicles into fleets starting on January 1, 2014; and (4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). The fleet must either show that its fleet average index was less than or equal to the calculated fleet average target rate, or that the fleet has met the Best Achievable Control Technology requirements. Therefore, impacts to energy resources during construction would be less than significant.

Operation

Electricity

The operation of the project would require electricity for multiple purposes, including cooling of the battery units, lighting, appliances, and powering various equipment, such as electric cranes and forklifts. Additionally, the supply, conveyance, treatment, and distribution of water would indirectly result in electricity usage. Electricity consumption associated with project operation is based on the CalEEMod outputs for energy water, and wastewater presented in Attachment A. The project applicant provided anticipated annual energy demand of electricity. According to these estimations, the project would consume approximately 17,905 megawatt-hours per year during operation (Attachment A).

Natural Gas

The operation of the Project is not anticipated to require any onsite natural gas consumption. Fuels used for the operation of the facility would consist primarily of diesel and gasoline. Any minor amounts of natural gas that may be consumed as a result of project operation would have a negligible contribution to the project’s overall energy consumption.

Petroleum

During operations, the majority of fuel consumption resulting from the project would involve the use of cranes and forklifts, routine tests of the diesel-powered onsite emergency generator, and motor vehicles traveling to and from the project site.

Petroleum fuel consumption associated with motor vehicles traveling to and from the project site is a function of the VMT as a result of project operation. Like construction worker and vendor trips, fuel consumption from worker and truck trips are estimated by converting the total CO₂ emissions from operation of the project to gallons using the conversion factors for CO₂ to gallons of gasoline or diesel. Mobile source emissions were estimated using EMFAC2021. Calculations for annual mobile source fuel consumption are provided in Table 10.

Table 10. Operational Annual Mobile Source Petroleum Demand

Fuel	Source	Vehicle MT CO ₂	kg/CO ₂ /Gallon	Gallons
Gasoline	Vehicles	0.22	8.78	34
Diesel	Vehicles	6.37	10.21	645
Total				679

Sources: Trips and vehicle CO₂ (Attachment A); kg/CO₂/Gallon (The Climate Registry 2023).

Notes: MT = metric ton; CO₂ = carbon dioxide; kg = kilogram

As shown in Table 10, total annual petroleum consumption for the project is estimated to be 679 gallons.

Summary

In summary, although electricity usage would increase due to the implementation of the project, the project would be subject to the State Building Energy Efficiency Standards. Although the project would see an increase in petroleum use during construction and operation, vehicles would use less petroleum due to advances in fuel economy and potential reduction in VMT over time. Therefore, impacts to energy resources during operation would be less than significant.

Over the lifetime of the project, the fuel efficiency of the vehicles being used by the visitors and employees of the project is expected to increase. As such, the amount of gasoline consumed as a result of vehicular trips to and from the project site during operation would decrease over time. There are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted a new approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the number of plug-in hybrids and zero-emission vehicles in California (CARB 2017a). Additionally, in response to Senate Bill (SB) 375, CARB has adopted the goal of reducing per-capita GHG emissions from 2005 levels by 8% by the year 2020 and 13% by the year 2035 for light-duty passenger vehicles in the SCAG planning area. This reduction would occur by reducing VMT through the integration of land use planning and transportation. As such, operation of the project is expected to use decreasing amounts of petroleum over time, due to advances in fuel economy.

In summary, implementation of the project would increase the demand for electricity at the project site and petroleum consumption in the region during construction and operation. However, as the project would be consistent with current regulations and policies, the project would not be wasteful, inefficient, and would not result in unnecessary energy resource consumption. The project’s energy consumption demands during construction and operation would conform to the State’s Title 24 standards such that the project would not be expected to wastefully use gas and electricity. Since the proposed project would comply with Title 24 conservation standards, the proposed project would not directly require the construction of new energy generation or supply facilities or result in wasteful, inefficient, or unnecessary consumption of energy. Moreover, vehicle usage associated with the project would use less petroleum due to advances in fuel economy over time. Therefore, impacts would be less than significant.

5.2.2 Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less-than-Significant Impact. The project would be subject to and would comply with, at a minimum, the California Building Energy Efficiency Standards (24 CCR, Part 6). Part 6 of Title 24 establishes energy efficiency standards for non-residential buildings constructed in California to reduce energy demand and consumption. As such, the project would comply with the California code requirements for energy efficiency.

Part 11 of Title 24 sets forth voluntary and mandatory energy measures that are applicable to the project under the California Green Building Standards, also known as CALGreen. CALGreen institutes mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, high-rise residential, state-owned buildings, schools, and hospitals, as well as certain residential and non-residential additions and alterations. On this basis, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, impacts would be less than significant.

5.2.1 Would the project result in cumulatively considerable energy impacts?

Less than Significant. Cumulative Projects that could exacerbate the Project's energy impacts include any Projects that could result in wasteful, inefficient, or unnecessary use of energy. However, the Project would not result in wasteful, inefficient, or unnecessary use of energy during construction or operation. Construction will result in short-term and temporary energy demands. Operation of the Project would not result in a wasteful, inefficient or unnecessary use of energy or conflict with an applicable plan. Therefore, the Project would have a less-than-significant impact with regards to cumulative energy impacts.

6 Conclusions

Criteria air pollutant emissions generated during construction and operation of the Project would not exceed SCAQMD's significance thresholds or result in a cumulatively considerable net increase in emissions. Similarly, the emissions would also not exceed the LST significance thresholds for sensitive receptors during construction, or create a CO hotspot. Therefore, the Project would result in a less than significant impact.

The Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs as there are currently no mandatory GHG regulations or finalized agency guidelines that would apply to implementation of this Project. Accordingly, potential cumulative GHG impacts would be less than significant. As such, the proposed Project would not result in significant impacts to air quality or GHG emissions.

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Attachment A

CalEEMod Emissions Output

Attachment B

Health Risk Assessment Output