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GREENHOUSE GAS TECHNICAL REPORT

MORRO BAY BATTERY ENERGY STORAGE SYSTEM PROJECT

MORRO BAY, CALIFORNIA

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ACRONYMS AND ABBREVIATIONS

°C	Degree Celsius
AB	Assembly Bill
ACC	Advanced Clean Car
ACE	Affordable Clean Energy
APCD	San Luis Obispo County Air Pollution Control District
AQ	Air Quality
AR4	Fourth Assessment Report on Climate Change
ATCM	Airborne Toxics Control Measure
BESS	Battery Energy Storage System
BMP	Best Management Practices
CAA	Clean Air Act
CAFE	Corporate Average Fuel Economy
CAIT	Climate Analysis Indicators Tool
CalEEMod®	California Emission Estimator Model
CALGreen	California Green Building Standards
CalRecycle	California Department of Resources Recycling and Recovery
CAP	Criteria Air Pollutant
CARB	California Air Resources Board
CCCC	California Climate Change Center
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CF ₄	Perfluoromethane
CFC	Chlorinated Fluorocarbon
CH ₄	Methane
CNRA	California Natural Resources Agency
CO ₂	Carbon Dioxide
CO _{2e}	Carbon Dioxide Equivalent
CPUC	California Public Utilities Commission
DOE	Department of Energy
DOT	Department of Transportation
DWR	Department of Water Resources

E3	Energy + Environmental Economics
EGU	Electric Generating Units
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act
EMFAC	EMission FACtor Model
EO	Executive Order
EV	Electric Vehicle
FR	Federal Register
GHG	Greenhouse Gas
GT	Billion Metric Tons
GW	Gigawatt
GWP	Global Warming Potential
HFC	Hydrofluorocarbon
HOV	High-occupancy Vehicle
HVAC	Heating, Ventilation and Air Conditioning
IPCC	Intergovernmental Panel on Climate Change
lb	Pound
LCP	Local Coastal Program
LCFS	Low Carbon Fuel Standard
LFG	Landfill Gas
LUP	Land Use Plan
MEWLO	Model Water Efficient Landscape Ordinance
MMT	Million Metric Tons
mpg	Miles Per Gallon
MPO	Metropolitan Planning Organization
MT	Metric Tons
MWh	Megawatt-Hour
N ₂ O	Nitrous Oxide
NHTSA	National Highway Traffic Safety Administration
OPR	Office of Planning and Research
PFCs	Perfluorocarbons
PG&E	Pacific Gas and Electric
ppb	Parts Per Billion

ppm	Parts Per Million
Ramboll	Ramboll US Consulting, Inc.
RFS	Renewable Fuel Standard
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
SAFE	Safer Affordable Fuel-Efficient
SB	Senate Bill
SCS	Sustainable Communities Strategy
SF ₆	Sulfur Hexafluoride
SLCPs	Short-lived Climate Pollutants
SLO	San Luis Obispo
SLOCOG	San Luis Obispo Council of Governments
SMAQMD	Sacramento Metropolitan Air Quality Management District
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
USEPA	United States Environmental Protection Agency
VMT	Vehicle Miles Traveled
ZEV	Zero-Emission Vehicle
ZNE	Zero Net Energy

1. INTRODUCTION

Morro Bay Power Company LLC (“Vistra”) proposes to develop a battery energy storage system (BESS) on a 107-acre property in the City of Morro Bay, California. The project includes three components: (1) Construction and operation of a 600-MW Battery Energy Storage System, (2) demolition and removal of the existing Morro Bay Power Plant building and stacks, and (3) adoption of a Master Plan. The BESS Facility would be constructed on a 24-acre portion of the Project Site and would consist of three two-story buildings with a total building area of 91,000 sq ft. Supporting infrastructure, including power conversion systems, substations, and tie-ins to the existing Pacific Gas and Electric substation adjacent to the project site, would also be included. The project also includes demolition of the existing Morro Bay Power Plant building and stacks and backfill and restoration of the site. A Master Plan would be developed in accordance with the requirements of Plan Morro Bay Policy LU-5.4 to change the land use designation of the 24-acre BESS portion of the Project Site from Visitor Serving Commercial to General (Light) Industrial. The project will not be designed or constructed with natural gas infrastructure, and all EV Capable spaces shall instead be EV Ready, consistent with CalGreen Tier 2 standards.

This report discusses the existing conditions in the project area, presents the regulatory framework for greenhouse gas (GHG) management, and analyzes the potential for GHG emissions. It analyzes the types and quantities of emissions that would be generated both on a temporary basis from the proposed construction activities and over the long term from operation of the Proposed Project. The analysis determines whether the Proposed Project emissions have the potential for the Proposed Project to result in significant adverse environmental impacts from GHG emissions and identifies feasible mitigation measures for significant adverse impacts, if required. The Proposed Project’s emissions of criteria air pollutants (CAP) and toxic air contaminants and potential impacts on local and regional air quality are discussed in the Air Quality (AQ) Technical Report. The Proposed Project’s energy usage characteristics are discussed in the Energy Analysis Technical Report to determine if the Project could result in any significant energy-related environmental impacts during its construction or operation activities.

The analysis is based on a review of existing conditions in the San Luis Obispo (SLO) region and globally along with climate regulations and targets set by the United States Environmental Protection Agency (USEPA), the California Air Resources Board (CARB), and the San Luis Obispo County Air Pollution Control District (SLO County APCD). This analysis includes methodologies identified in SLO County APCD’s 2012 California Environmental Quality Act (CEQA) Air Quality Guidelines¹ and its companion documentation. Calculations were prepared to quantitatively assess the GHG contributions of the Proposed Project (see tables within **Appendix A** as referenced in more detail below); this information forms the basis of much of the assessment of climate impacts presented here.

The GHG impact methodologies and approaches to the analysis (described under “Approach to Analysis”) assume that the Project is built out in a single phase from 2023 to 2028. The Project construction would consist of two components: 1) construction between 2023 and

¹ San Luis Obispo County Air Pollution Control District (SLO County APCD) CEQA Air Quality Guidelines, updated April 2012, https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20MemoTable1-1_July2021%29_LinkedwithMemo.pdf. Accessed October 24, 2022

2026 and subsequent operation of the BESS on approximately 24 acres of the 107-acre project site, and 2) demolition and removal of the existing Power Plant building and stack beginning in 2026 with completion in 2028. Operational impacts are analyzed assuming full occupancy immediately after the end of BESS construction in 2026. Further details on the GHG impact methodologies and approaches to the analyses are presented below.

2. GHG SCIENTIFIC BACKGROUND AND REGULATORY OVERVIEW

2.1 GHG Scientific Background

There is international scientific consensus that anthropogenic emissions of GHGs² have and will continue to contribute to changes in the global climate. Although there is uncertainty concerning the magnitude, rate, and ultimate effects of this change, it is generally accepted that climate change will result in substantial adverse environmental impacts.

Climate change is the cumulative effect of all natural and anthropogenic sources of GHGs on a global scale. GHG emissions from an individual project, even a very large development project, would not individually generate sufficient GHG emissions to measurably influence global climate change.³ Consideration of a project's climate change impact, therefore, is essentially an analysis of a project's contribution to a cumulatively significant global impact through its emission of GHGs. While it is possible to examine the quantity of GHGs that would be emitted from individual project sources, it is not currently possible to link GHGs emitted from a specific source or location to particular global climate changes.

The State of California, particularly through Assembly Bill (AB) 32 and Senate Bill (SB) 32, has set state-wide targets for the reduction of GHG emissions. The goals are to reduce future GHG emissions in a state that is expected to experience growth in both population and economic output.

2.1.1 Global Setting

This section describes the status of global science on climate change and the scientific consensus regarding the role of anthropogenic GHG emissions in contributing to climate change and global warming. This section also describes global-scale estimates of GHG trends and projected effects on climate.

2.1.1.1 Global Climate Change

Global warming and global climate change are both terms that describe changes in the earth's climate. Global climate change is a broad term used to describe any worldwide, long-term change in the earth's climate. This change could be, for example, an increase or decrease in temperatures, the start or end of an ice age, or a shift in precipitation patterns. The term global warming is more specific than global climate change and refers to a general increase in temperatures across the earth. Though global warming is characterized by rising temperatures, it can cause other climatic changes, such as a shift in the frequency and intensity of rainfall or hurricanes. Global warming does not necessarily imply that all locations will be warmer. Some specific, unique locations may be cooler even though the

² For the purposes of this analysis, the term "GHGs" refers to carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride, those gases regulated under California AB 32 and the Kyoto Protocol of the United Nations Framework Convention on Climate Change. Although the State of California also declared nitrogen trifluoride a GHG, there is no nitrogen trifluoride associated with this project. Therefore, nitrogen trifluoride will not be further considered.

³ California Office of Planning and Research (OPR). 2008. Technical Advisory. CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review. June 19. Available at: <http://opr.ca.gov/docs/june08-ceqa.pdf>. Accessed August 19, 2022.

world, on average, is warmer. All of these changes fit under the umbrella of global climate change.⁴

While global warming can be caused by natural processes, there is a general scientific consensus that most current global warming is the result of human activity on the planet.⁵ This human-made, or anthropogenic, warming is primarily caused by increased emissions of GHGs that keep the earth's surface warm. This is called "the greenhouse effect." The greenhouse effect and the role that GHGs play in it are described below.

2.1.1.2 The Greenhouse Effect

Greenhouses allow sunlight to enter, and then they capture some of the heat generated by the sunlight. Similarly, the earth's atmosphere acts like a greenhouse by retaining some of the heat that is generated by the sun. When solar radiation from the sun reaches the earth, much of it penetrates the atmosphere to ultimately reach the earth's surface; this solar radiation is absorbed by the earth's surface and then re-emitted as heat in the form of infrared radiation.⁶ The warming potential of GHGs does not come from the absorption of solar radiation but from the absorption of infrared radiation. When the infrared radiation is absorbed by the molecules of GHGs, it is re-radiated in all directions. A portion of the infrared radiation is emitted back toward the surface of the earth, in effect "trapping" the heat in the atmosphere.⁷ This phenomenon is referred to as the "greenhouse effect."

The earth's greenhouse effect has existed far longer than humans have and has played a key role in the development of life. Concentrations of major GHGs, such as carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and water vapor, have been naturally present for millennia at relatively stable levels in the atmosphere, maintaining hospitable temperatures on the surface of the earth. Without these GHGs, the earth's temperature would be too cold for life to exist.

In the absence of major industrial human activity, natural processes have maintained atmospheric concentrations of GHGs, and, therefore, global temperatures at relatively constant levels over the last several centuries.⁸ As human industrial activity has increased, atmospheric concentrations of certain GHGs have grown dramatically. Concentrations of CO₂ and CH₄ over the past 10,000 years have increased, particularly dramatically since the Industrial Revolution. As the concentrations of GHGs increase due to human activity, more infrared radiation is reflected back toward the earth, subsequently heating the surface of the earth to higher temperatures. This is the process that is described as human-induced global warming.

⁴ Other definitions of "greenhouse effect" and "global warming" can be found on Merriam-Webster online at <http://www.m-w.com/>. A definition for "climate change" can be found at <https://www.dictionary.com/>, which uses the Random House Unabridged Dictionary. (Websites accessed August 19, 2022.)

⁵ IPCC. 2007. *Summary for Policymakers*. In: *Climate Change 2007: The Physical Science Basis*. Available at: <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>. Accessed: August 19, 2022.

⁶ All light, be it visible, ultraviolet, or infrared, carries energy.

⁷ Infrared radiation is characterized by longer wavelengths than solar radiation. GHGs reflect radiation with longer wavelengths. As a result, instead of escaping back into space, GHGs reflect much infrared radiation (i.e., heat) back to the earth.

⁸ Examples of natural processes include the addition of GHGs to the atmosphere from respiration, fires, and decomposition of organic matter. The removal of GHGs is mainly from plant and algae growth and absorption by the ocean.

In 2013, the Intergovernmental Panel on Climate Change (IPCC) began releasing components of its Fifth Assessment Report,⁹ providing a comprehensive assessment of climate change science. The Fifth Assessment Report states that there is a scientific consensus that the global increases in GHGs since 1750 are mainly due to human activities such as fossil fuel use, land use change (e.g., deforestation), and agriculture. In addition, the report states that it is likely that these changes in GHG concentrations have contributed to global warming. Confidence levels of claims in this report have increased since the release of the Third and Fourth Assessment Reports due to the large number of simulations run and the broad range of available climate models.¹⁰ The IPCC is currently working on its Sixth Synthesis Report and expects to release this in late 2022 or early 2023.¹¹

2.1.1.3 GHGs and GHG Emission Sources

The term “greenhouse gases” includes gases that are emitted from natural processes, such as forest fires, and anaerobic degradation, as well as man-made fossil fuel combustion, such as CO₂, CH₄, N₂O, and water vapor, as well as gases that are only human-made and that are emitted through the use of modern industrial products, such as hydrofluorocarbons (HFCs), chlorinated fluorocarbons (CFCs), and sulfur hexafluoride (SF₆). These last three families of gases, while not naturally present in the atmosphere, have properties similar to the naturally occurring GHGs that also cause them to trap infrared radiation when they are present in the atmosphere, thus making them GHGs. These six gases comprise the major GHGs that are recognized by the Kyoto Protocol (water vapor is not included).¹² A seventh gas, nitrogen trifluoride, was also recognized by CARB as a GHG.¹³ There are other GHGs that are not recognized by the Kyoto Protocol or CARB, due to either the smaller role that they play in climate change or the uncertainties surrounding their effects. Atmospheric water vapor is not recognized by the Kyoto Protocol or CARB because there is not an obvious correlation between atmospheric water vapor concentrations and specific human activities. Atmospheric water vapor appears to act in a positive feedback manner; higher temperatures lead to higher atmospheric water vapor concentrations, which in turn cause more global warming.¹⁴

The effect each GHG has on global warming is a combination of the volume of its emissions and its global warming potential (GWP). GWP indicates, on a pound (lb)-for-pound basis, how much a gas will contribute to global warming relative to how much warming would be caused by the same mass of CO₂. CH₄ and N₂O are substantially more potent than CO₂, with GWPs of 25 and 298,¹⁵ respectively. However, these GHGs are nowhere near as potent as

⁹ IPCC. 2014. Fifth Assessment Report. Climate Change 2014: Working Groups I, II, and III Reports. Available at: <http://www.ipcc.ch/report/ar5/syr/>. Accessed August 19, 2022.

¹⁰ IPCC. 2001. Third Assessment Report. Available at: <https://www.ipcc.ch/reports/?rp=ar3>. Accessed: August 19, 2022.

¹¹ IPCC. 2022. AR6 Synthesis Report. Available at: <https://www.ipcc.ch/report/sixth-assessment-report-cycle/>. Accessed: March 2022.

¹² The Kyoto Protocol sets legally binding targets and timetables for cutting the GHG emissions of industrialized countries. The U.S. has not approved the Kyoto Protocol.

¹³ Senate Bill 104, which directs CARB to regulate nitrogen trifluoride and possibly other gases found to be at least as harmful as CO₂ was signed into law by Governor Schwarzenegger in October 2009.

¹⁴ IPCC. 2001. Third Assessment Report. Available at: <https://www.ipcc.ch/reports/?rp=ar3>. Accessed: August 19, 2022.

¹⁵ These GWPs are from the IPCC's Fourth Assessment Report. (Available at: <https://www.ipcc.ch/report/ar4/wg1/>. Accessed August 19, 2022).

synthetic chemicals such as SF₆ and perfluoromethane (CF₄), which have GWPs of 22,800 and 7,390, respectively, compared to a GWP of 1 for CO₂.¹⁶

GHG emissions are typically measured in terms of mass of carbon dioxide equivalent (CO₂e). CO₂e is calculated as the product of the mass of a given GHG and its specific GWP.

The most important GHG in human-induced global warming is CO₂. While many gases have much higher GWPs than the simple GHGs, CO₂ is emitted in such vastly higher quantities that it accounts for 81% of the GWP of all GHGs emitted by the United States (US).¹⁷ Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO₂ emissions and thus substantial increases in atmospheric CO₂ concentrations. The most recent measurements of atmospheric CO₂ concentrations are about 416 parts per million (ppm) for 2020, around 48% higher than the pre-industrial concentrations of about 280 ppm.^{18,19} In addition to the sheer increase in the volume of its emissions, CO₂ is a major factor in human-induced global warming because of its lifespan in the atmosphere of 50 to 200 years.

Concentrations of the second most prominent GHG, CH₄, have also increased due to human activities such as rice production, degradation of waste in landfills, cattle farming, and natural gas mining. Present levels of atmospheric CH₄ are more than double pre-industrial levels, up to 1,907 parts per billion (ppb) as compared to 715 ppb.^{20,21} CH₄ has a relatively short atmospheric lifespan of only 12 years but has a higher GWP than CO₂.

N₂O concentrations increased from about 270 ppb in pre-industrial times to about 334 ppb by 2021.^{22,23} Most of this increase can be attributed to agricultural practices (such as soil and manure management), as well as fossil-fuel combustion and the production of some acids. N₂O's 120-year atmospheric lifespan increases its role in global warming.

Besides CO₂, CH₄, and N₂O, there are several gases and categories of gases that were not present in the atmosphere in pre-industrial times but now exist and contribute to warming. These include CFCs, used often as refrigerants, and their more stratospheric-ozone-friendly replacements, HFCs. Fully fluorinated species, such as SF₆ and CF₄, are present in the atmosphere in relatively small concentrations but have extremely long lifespans of 50,000 and 3,200 years each, making them potent GHGs.

SF₆ is predominantly used in electric power systems for voltage electrical insulation, current interruption, and arc quenching in the transmission and distribution of electricity. While

¹⁶ Fourth Assessment Report.

¹⁷ USEPA. 2020. Inventory of U.S. GHG Emissions and Sinks: 1990-2018. Available at: <https://www3.epa.gov/climatechange/ghgemissions/usinventoryreport.html>. Accessed October 13, 2020.

¹⁸ NOAA Global Monitoring Laboratory. 2022. Global Monthly Mean CO₂. Available at: <https://www.esrl.noaa.gov/gmd/ccgg/trends/global.html#global>, accessed March 2022.

¹⁹ IPCC. 2007. *Summary for Policymakers*. In: *Climate Change 2007: The Physical Science Basis*. Available at: <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>, accessed March 2022.

²⁰ NOAA Global Monitoring Laboratory. 2021. Global Monthly Mean CH₄. Available at: https://www.esrl.noaa.gov/gmd/ccgg/trends_ch4/, accessed March 2022.

²¹ IPCC. 2007. *Summary for Policymakers*. In: *Climate Change 2007: The Physical Science Basis*. Available at: <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>, accessed March 2022.

²² IPCC. 2007. *Summary for Policymakers*. In: *Climate Change 2007: The Physical Science Basis*. Available at: <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>, accessed March 2022.

²³ NOAA Global Monitoring Laboratory. 2021. Global N₂O Monthly Means. Available at: https://www.esrl.noaa.gov/gmd/ccgg/trends_n2o/, accessed March 2022.

electrical equipment is designed to prevent SF₆ emissions, leaks can occur from aging equipment or during manufacturing, installation, maintenance and servicing, and de-commissioning. While it is expected that some SF₆ or similar insulating GHGs would be used in the BESS when initially constructed, usage will be reduced over time and will eventually be entirely or nearly entirely eliminated as required by current regulation (see Section 2.2.2.8). As a result, emissions of SF₆ or similar insulating GHGs from the BESS are expected to be minimal.

2.1.1.4 Current and Projected Climatic Impacts of Global Warming

A strong indication that anthropogenic global warming is currently taking place is the fact that nine of the top ten warmest years since 1880 have occurred since 2005, with 2016 as the hottest year on record.²⁴ According to the Intergovernmental Panel on Climate Change, “human activities are estimated to have caused approximately 1 degree Celsius (°C) of global warming above pre-industrial levels” as of 2017.²⁵ It is currently accepted that warming of 1.5°C above pre-industrial levels by 2100 represents a threshold for significant global impacts due to warming; currently accepted climate models indicate that this threshold will be far surpassed under current emissions levels.

There is scientific consensus that global climate change will increase the frequency of heat extremes, heat waves, and heavy precipitation events. Other likely direct effects include an increase in the areas affected by drought and by floods, an increase in tropical cyclone activity, a rise in sea level, and recession of polar ice caps. The impacts of global warming have already been demonstrated by substantial ice loss in the Arctic.^{26,27} Scenarios for 2100 modeled in the IPCC’s Fifth Assessment Report include the following:²⁸

Temperature Increase by 2100

- Low Emissions Scenario: 1.1°C to 2.6°C
- High Emissions Scenario: 2.5°C to 7.8°C

Sea Level Rise by 2100

- Low Emissions Scenario: 0.26 to 0.55 meters
- High Emissions Scenario: 0.45 to 0.82 meters

²⁴ NOAA National Centers for Environmental Information. 2020. State of the Climate: Global Climate Report for Annual 2019. Available at: <https://www.ncdc.noaa.gov/sotc/global/201913>. Accessed October 14, 2020.

²⁵ IPCC. 2018. Special Report: Global Warming of 1.5°C. Summary for Policymakers. Available at: <https://www.ipcc.ch/sr15/chapter/chapter-1/>. Accessed: October 13, 2020.

²⁶ IPCC. 2007. *Summary for Policymakers*. In: *Climate Change 2007: The Physical Science Basis*. Available at: <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>. Accessed October 13, 2020.

²⁷ IPCC. 2007c. Summary for Policymakers. In: *Climate Change 2007: Impacts, Adaptation and Vulnerability*. Available at: http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4_wg2_full_report.pdf. Accessed October 13, 2020.

²⁸ Future GHG emissions are the product of very complex dynamic systems, determined by driving forces such as demographic development, socio-economic development, and technological change. Their future evolution is highly uncertain. Scenarios are alternative images of how the future might unfold and are an appropriate tool with which to analyze how driving forces may influence future emission outcomes and to assess the associated uncertainties. They assist in climate change analysis, including climate modeling and the assessment of impacts, adaptation, and mitigation. The possibility that any single emissions path will occur as described in scenarios is highly uncertain. More information on the IPCC’s selection of scenarios is available at: IPCC, 2014. https://ar5-syr.ipcc.ch/topic_summary.php. Accessed October 13, 2020.

2.1.2 United States Setting

In 2020, the US emitted about 5.9 billion metric tons (gross emissions) of CO₂e. This represents a 7.4 percent decrease since 1990, and a 20 percent reduction below peak levels in 2005. Of the six economic sectors - residential, commercial, industrial, transportation, electric power, and agriculture - transportation accounted for the highest fraction of GHG emissions in 2020 (approximately 36 percent). Of the transportation-related emissions, 5.1 percent were from commercial aircraft and 1.8 percent from other aircraft. Most transportation emissions were from passenger cars (40.5 percent); freight trucks (25.5 percent), and light-duty trucks (17.2 percent).²⁹

According to the Climate Analysis Indicators Tool (CAIT) Emissions, global GHG emission totaled approximately 47.2 billion metric tons (GT) CO₂e in 2018.³⁰ The top 10 emitting countries in 2018 were as follows:

- China – 11.7 GT CO₂e
- US – 5.8 GT CO₂e³¹
- India – 3.3 GT CO₂e
- Russian Federation – 2.0 GT CO₂e
- Indonesia – 1.7 GT CO₂e
- Brazil – 1.4 GT CO₂e
- Japan – 1.2 GT CO₂e
- Iran – 0.8 GT CO₂e
- Germany – 0.8 GT CO₂e
- Canada – 0.8 GT CO₂e

In 2019, CO₂e emissions from industrialized countries reporting their inventories to the United Nations Framework Convention on Climate Change (UNFCCC) were as follows:³²

- US – 6.6 GT CO₂e
- European Union (27 members) – 4.1 GT CO₂e
- Russian Federation – 2.1 GT CO₂e
- Japan – 1.2 GT CO₂e
- Canada – 0.73 GT CO₂e

²⁹ USEPA. 2022. Inventory of U.S. Greenhouse Gas Emissions and Sinks. Available at: <https://www.epa.gov/system/files/documents/2022-02/us-ghg-inventory-2022-main-text.pdf>, accessed March 2022.

³⁰ Climate Watch. 2022. Global Historical Emissions. CAIT data. Available at: https://www.climatewatchdata.org/ghg-emissions?breakBy=countries&end_year=2018®ions=TOP&source=CAIT&start_year=1990, accessed March 2022.

³¹ Differences between USEPA value and CAIT values may be due to differences in sources and methodology used by the two organizations in addition to the different years.

³² UNFCCC. 2021. *Time Series Annex I: GHG Total Excluding Land Use, Land-Use Change and Forestry*. Available at: https://di.unfccc.int/time_series, accessed March 2022.

2.1.3 California Setting

In 2019, California emitted approximately 418 million metric tons of CO₂e, or about 8 percent of the U.S. emissions. Of these emissions, approximately 40 percent were attributed to the transportation sector, including direct emissions from vehicle tailpipe, off-road transportation mobile sources, intrastate aviation, rail, and watercraft.³³ California's percentage contribution to overall U.S. emissions is due primarily to the sheer size of California compared to other states, as California has among the lowest per capita GHG emission rates in the country, due to the success of its energy efficiency and renewable energy programs and other commitments that have lowered the State's GHG emissions rate of growth by more than half of what it would have been otherwise. Another factor that has reduced California's fuel use and GHG emissions is its mild climate compared to that of many other states.

The largest contributor to California's 2019 GHG emissions inventory was the transportation sector at 40 percent, followed by industrial sources at 21 percent, electricity generation (both in-state and out-of-state) at 14 percent, and commercial and residential sources at 10 percent. Agriculture, high GWP sources (including the release of ozone depleting substances, losses from the electricity transmission and distribution system, and gases from semiconductor manufacturing processes), and the recycling and waste sectors made up the remainder of the inventory.³⁴

2.1.4 San Luis Obispo County Setting

SLO County APCD reported community-wide 2006 GHG emissions by sector as part of the SLO Climate Action Plan. Total GHG emissions within SLO county in 2006 were estimated as 917,700 metric tons (MMT) CO₂e.³⁵ The transportation sector represents the largest source of GHG emissions in SLO county in 2006 at 40% followed by industrial sources at 24%, residential at 15%, livestock at 9%, off-road equipment at 7%, and crops at 2%.³⁶

2.1.5 City of Morro Bay Setting

The SLO County APCD CEQA Air Quality Handbook includes guidelines intended to assist local governments with developing community scale Climate Action Plans. Some of these guidelines include a community wide GHG emissions inventory, GHG reduction targets in compliance with AB 32, analyses of local and state policies that may impact GHG emissions, quantification of GHG reduction measures, implementation and monitoring strategies, and an adequate environmental review. In accordance with these guidelines, the City of Morro Bay developed a Climate Action Plan in 2014. According to the Climate Action Plan, the largest contributors of GHG emissions in Morro Bay in 2005 were transportation at 40%, followed by

³³ CARB. 2021. California Greenhouse Gas Emissions for 2000-2019 – Trends of Emissions and Other Indicators. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/ca_ghg_inventory_trends_2000-2019.pdf. Accessed March 2022. Note that as of March 2022, 2019 was the most recent year for which data was available.

³⁴ Ibid.

³⁵ County of SLO Department of Planning and Building. 2011. County of San Luis Obispo EnergyWise Plan: Designing Energy and Climate Solutions for the Future. Available at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/County_CAP_Web.pdf. Accessed October 28, 2022.

³⁶ SLO County APCD. 2021. SLO County APCD Update on CEQA & GHG. Available at: <https://www.ourair.org/wp-content/uploads/2021-06bcc-4pp.pdf>. Accessed October 25, 2022.

residential at 29%, industrial sources at 21%, off-road sources at 5%, and solid waste at 5%.³⁷

2.1.6 Climate Change Effects

2.1.6.1 Potential Effects of Climate Change on State of California

According to the CARB, some of the potential impacts in California of global warming may include loss of snowpack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years.³⁸ The California Climate Change Center (CCCC) has released four assessment reports on climate change in California, the most recent in 2019.³⁹ Per California's Fourth Climate Change Assessment, by 2050, the statewide average annual maximum daily temperature is projected to warm by approximately 5.6 to 8.8°F above 2000 averages.⁴⁰

Below is a summary of some of the potential effects reported in an array of studies that could be experienced in California because of global warming and climate change.

2.1.6.2 Air Quality

Higher temperatures, conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. For other pollutants, the effects of climate change and/or weather are less well studied, and even less well understood. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. Studies have been conducted to evaluate the potential impacts of climate change on wildfire frequency based on lower and higher emissions scenarios. Per California's Fourth Climate Change Assessment, under a higher emissions scenario, the average area burned statewide could increase by 77 percent above historic levels by 2100.⁴¹ Per California's Third Climate Change Assessment, the estimated burned area is projected to increase between 57 and 169 percent, depending on location. To emphasize that, 2017, 2018 and 2020 have been among the top five years since 1987 in acres burned in California.⁴² However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths,

³⁷ City of Morro Bay Final Climate Action Plan. Adopted January 14, 2014. Available at: <https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/Morro%20Bay%20Final%20CAP%201.14.14.pdf>. Accessed October 28, 2022.

³⁸ California Air Resources Board (CARB). 2006. Public Workshop to Discuss Establishing the 1990 Emissions Level and the California 2020 Limit and Developing Regulations to Require Reporting of Greenhouse Gas Emissions, Sacramento, CA. December 1.

³⁹ California Climate Change Center (CCCC). 2019. California's Fourth Climate Change Assessment. Available at: <http://www.climateassessment.ca.gov/>. Accessed: October 13, 2020.

⁴⁰ CCCC. 2019. California's Fourth Climate Change Assessment. Key Findings. Available at: <http://www.climateassessment.ca.gov/state/overview/>. Accessed: October 13, 2020.

⁴¹ Ibid.

⁴² CalFire. 2020. California Wildfires and Acres for All Jurisdictions. Available at: <https://www.fire.ca.gov/media/11397/fires-acres-all-agencies-thru-2018.pdf>. Accessed: October 13, 2020.

illnesses, and asthma attacks throughout the State.⁴³ It is estimated that over the next decade, higher temperatures could increase the demand for electricity by 1 Gigawatt (GW) during summer months, which would require purchase of costly peak power from external sources or the construction of one new large power plant in California.⁴⁴ During periods of extreme heat, efficiency of electricity generation is reduced at natural gas plants; hydropower generation is reduced; and increased losses occur at substations; all while electricity demands are increased. These factors are projected to result in the need for more than 17 GW, or 38 percent of additional capacity, needed by 2100. Additionally, transmission lines lose 7 to 8 percent of transmitting capacity in higher temperatures, which also results in a need for increased power generation.⁴⁵ This additional predicted need for electricity does not include the additional demand that will result from the electrification of the transportation system.

2.1.6.3 Water Supply

Uncertainty remains with respect to the overall impact of global climate change on future water supplies in California. For example, models that predict drier conditions suggest decreased reservoir inflows and storage, and decreased river flows, relative to current conditions. By comparison, models that predict wetter conditions project increased reservoir inflows and storage, and increased river flows.⁴⁶

A July 2006 technical report prepared by the California Department of Water Resources (DWR) addresses the State Water Project, the Central Valley Project, and the Sacramento-San Joaquin Delta. Although the report projects that, “[c]limate change will likely have a significant effect on California’s future water resources ... [and] future water demand,” it also reports that, “there is much uncertainty about future water demand, especially those aspects of future demand that will be directly affected by climate change and warming. While climate change is expected to continue through at least the end of this century, the magnitude and, in some cases, the nature of future changes is uncertain. This uncertainty serves to complicate the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood,”⁴⁷ DWR adds that “[i]t is unlikely that this level of uncertainty will diminish significantly in the foreseeable future.”⁴⁸ Still, changes in water supply are expected to occur, and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows.⁴⁹

⁴³ California Climate Change Center (CCCC). 2006. *Our Changing Climate: Assessing the Risks to California*, CEC500-2006-077, Sacramento, CA. July. Available at: <https://www.engr.scu.edu/~emaurer/papers/CEC-500-2006-077.pdf>. Accessed: October 13, 2020.

⁴⁴ California Climate Change Center. 2012. *Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California*. CEC-500-2012-007. July, 2012.

⁴⁵ *Ibid.*

⁴⁶ Brekke, L.D., et al. 2004. —Climate Change Impacts Uncertainty for Water Resources in the San Joaquin River Basin, California. *Journal of the American Water Resources Association*. 40(2): 149–164. Malden, MA, Blackwell Synergy for AWRA.

⁴⁷ California Department of Water Resources (DWR). 2006. *Progress on Incorporating Climate Change into Management of California Water Resources*, Sacramento, CA. July.

⁴⁸ California Department of Water Resources (DWR). 2006. *Progress on Incorporating Climate Change into Management of California Water Resources*, Sacramento, CA. July.

⁴⁹ Kiparsky 2003, *op. cit.*; DWR, 2005, *op. cit.*; Cayan, D., et al, 2006. *Scenarios of Climate Change in California: An Overview* (White Paper, CEC-500-2005-203-SF), Sacramento, CA. February.

California's Third Climate Change Assessment outlines the state's urgent water management challenges brought on because of climate change. These include increasing demand from a growing population as temperatures rise, earlier snowmelt and runoff, and faster-than-historical sea-level rise threatening aging coastal water infrastructure and levees in the Sacramento-San Joaquin Delta.⁵⁰ Additionally, they predict that competition between urban and agriculture water users and environmental needs will increase due to effects on water supply and stream flows. The Fourth Climate Change Assessment concludes that by 2100, water supply from snowpack is projected to decline by two-thirds, and that by 2050, California's agricultural production could face climate-related water shortages of up to 16 percent in certain regions.⁵¹

2.1.6.4 Hydrology

As discussed above, climate change could potentially affect the following: the amount of snowfall, rainfall and snowpack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for saltwater intrusion. Sea level rise can be a product of global warming through two main processes - expansion of sea water as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could also jeopardize California's water supply. In particular, saltwater intrusion would threaten the quality and reliability of the state's major fresh water supply that is pumped from the southern portion of the Sacramento/San Joaquin River Delta. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events. Assuming the rate of sea level rise continues to follow global trends, sea level along California's coastline in 2050 could be 10-18 inches higher than in 2000, and 31-55 inches higher by the end of this century.⁵² Based on these current projections, the current 100-year storm could occur once every year. California's Fourth Climate Assessment projects that without implementation of protective measures, major airports will be susceptible to major flooding from a combination of sea-level rise and storm surge by years 2040 to 2080 and that the miles of highways susceptible to coastal flooding from a 100-year storm will triple from current levels by 2100.⁵³

2.1.6.5 Agriculture

California has a \$30 billion agricultural industry that produces half the country's fruits and vegetables. The CCCC notes that higher CO₂ levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, water demand could increase, crop-yield could be threatened by a less reliable water supply, and greater ozone pollution could render plants more susceptible to pest and disease outbreaks. In addition, temperature increases could change the time of year that certain crops, such as wine grapes, bloom or ripen, and thus affect their quality.⁵⁴

⁵⁰ California Climate Change Center, 2012. Our Changing Climate 2012: Vulnerability and Adaptation to the Increasing Risks from Climate Change in California. CEC-500-2012-007. July, 2012.

⁵¹ CCCC. 2019. California's Fourth Climate Change Assessment. Key Findings. Available at: <http://www.climateassessment.ca.gov/state/overview/>. Accessed October 13, 2020.

⁵² Ibid.

⁵³ CCCC. 2019. California's Fourth Climate Change Assessment. Key Findings. Available at: <http://www.climateassessment.ca.gov/state/overview/>. Accessed October 13, 2020.

⁵⁴ California Climate Change Center (CCCC). 2006. op. cit.

2.1.6.6 Ecosystems and Wildlife

Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. In 2004, the Pew Center on Global Climate Change released a report examining the possible impacts of climate change on ecosystems and wildlife.⁵⁵ The report outlines four major ways in which it is thought that climate change could affect plants and animals: (1) timing of ecological events, (2) geographic range, (3) species' composition within communities, and (4) ecosystem processes such as carbon cycling and storage.

2.2 Regulatory Overview

2.2.1 Federal Provisions

Although the US is not a party to the Kyoto Protocol, in 2002, President George W. Bush set a national policy goal of reducing the GHG emission intensity (tons of GHG emissions per million dollars of gross domestic product) of the US economy by 18% by 2012.⁵⁶ The goal did not establish binding reduction mandates. Rather, the USEPA began to administer a variety of voluntary programs and partnerships with industries that produce and use synthetic gases to reduce emissions of particularly potent GHGs.

In 2015, the US State Department submitted the nation's GHG emissions reduction target to the UNFCCC. The submission, referred to as Intended Nationally Determined Contribution, is a formal statement of the US target to reduce the nation's emissions by 26 to 28 percent below 2005 levels by 2025. As of November 4, 2020, the US has withdrawn from the Paris Agreement which bound the US to these guidelines. In February 2021, President Joe Biden signed the instrument to re-join the Paris Agreement.

The emissions reduction target is the culmination of a process that examined opportunities under existing regulatory authorities to reduce GHG emissions in 2025 from all sources in all economic sectors. Several US laws, as well as existing and proposed regulations, are relevant to the implementation of the US target, including the Clean Air Act (42 U.S.C. § 7401 et seq.), the Energy Policy Act (42 U.S.C. § 13201 et seq.), and the Energy Independence and Security Act (42 U.S.C. § 17001 et seq.).⁵⁷

2.2.1.1 Energy Independence and Security Act

The Energy Independence and Security Act of 2007 (EISA) facilitates the reduction of national GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) that requires fuel producers to use at least 36 billion gallons of biofuel in 2022;
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy

⁵⁵ Parmesan, C. and H. Galbraith. Observed Impacts of Global Climate Change in the U.S., Arlington, VA: Pew Center on Global Climate Change. November 2004.

⁵⁶ NOAA. 2002. President Announces Clear Skies and Global Climate Change Initiative, February. <http://georgewbush-whitehouse.archives.gov/news/releases/2002/02/20020214-5.html>. Accessed October 13, 2020.

⁵⁷ The White House, FACT SHEET: U.S. Reports its 2025 Emissions Target to the UNFCCC (May 2015). <https://www.whitehouse.gov/the-press-office/2015/03/31/fact-sheet-us-reports-its-2025-emissions-target-unfccc>. Accessed October 13, 2020

conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances;

- Requiring approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020; and
- While superseded by the USEPA and NHTSA actions described above, (i) establishing miles per gallon targets for cars and light trucks and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of EISA address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of “green jobs.”

2.2.1.2 Clean Power Plan and New Source Performance Standards for Electric Generating Units

On October 23, 2015, the USEPA published a final rule establishing the Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electricity Utility Generating Units (80 FR 64510-64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units (EGUs). The guidelines establish CO₂ emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel fired electric utility steam-generating units, and (2) stationary combustion turbines. Concurrently, the USEPA published a final rule establishing Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units (80 Federal Register [FR] 64661-65120). The rule prescribes CO₂ emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. On June 19, 2019, the USEPA issued the final Affordable Clean Energy rule (ACE), which replaced the Clean Power Plan. The ACE rule establishes emission guidelines for states to use when developing plans to limit CO₂ at their coal-fired EGUs. In this notice, the USEPA also repealed the Clean Power Plan, and issued new implementing regulations for ACE and future rules under section 111(d).

2.2.2 California Provisions

2.2.2.1 Executive Order S-3-05

In 2005, former Governor Schwarzenegger signed Executive Order (EO) S-3-05, which identified the following statewide GHG emission reduction goals for California: (1) by 2010, reduce GHG emissions to 2000 levels; (2) by 2020, reduce GHG emissions to 1990 levels; and (3) by 2050, reduce GHG emissions to 80 percent below 1990 levels.

2.2.2.2 2017 Second Update to the Scoping Plan

In November, 2017, CARB published California’s 2017 Climate Change Scoping Plan (Second Update).⁵⁸ This update identifies CARB’s strategy for achieving the state’s 2030 GHG target

⁵⁸ CARB. 2017. California’s 2017 Climate Change Scoping Plan. November. Available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed October 13, 2020.

as established in SB 32 (discussed below). The strategy includes continuation of the Cap-and-Trade Program through 2030, and incorporates a Mobile Source Strategy that includes strategies targeted to increase zero emission vehicle fleet penetration and a more stringent target for the Low Carbon Fuel Standard by 2030. The Second Update also incorporates approaches to cutting short-lived climate pollutants (SLCPs) under the Short-Lived Climate Pollutant Reduction Strategy (a planning document that was adopted by CARB in March 2017), and acknowledges the need for reducing emissions in agriculture and highlights the work underway to ensure that California's natural and working lands increasingly sequester carbon. During development of the Second Update, CARB held a number of public workshops in the Natural and Working Lands, Agriculture, Energy and Transportation sectors to inform development of the 2030 Scoping Plan Update.⁵⁹

When discussing project-level GHG emissions reduction actions and thresholds, the Second Update states “[a]chieving net zero increases in GHG emissions, resulting in no contribution to GHG impacts, may not be feasible or appropriate for every project, however, and the inability of a project to mitigate its GHG emissions to net zero does not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA.” On December 14, 2017, CARB adopted the 2017 Climate Change Scoping Plan.

2.2.2.3 Executive Order B-30-15

In April 2015, Governor Brown signed EO B-30-15, which established the following GHG emission reduction goal for California: by 2030, reduce GHG emissions to 40 percent below 1990 levels. This EO also directed all state agencies with jurisdiction over GHG-emitting sources to implement measures designed to achieve the new interim 2030 goal, as well as the pre-existing, long-term 2050 goal identified in EO S-3-05 (see discussion above). Additionally, the EO directed CARB to update its Scoping Plan (see discussion above) to address the 2030 goal.

2.2.2.4 Senate Bill 32

Enacted in 2016, SB 32 (Pavley, 2016) codifies the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030.

2.2.2.5 Executive Order B-55-18

In 2018, Governor Jerry Brown signed EO B-55-18. This established a new state-wide goal to achieve carbon neutrality as soon as possible and no later than 2045 and to achieve and maintain net negative emissions thereafter.

2.2.2.6 Executive Order EO N-79-20

In September 2020, Governor Jerry Brown signed an executive order calling for a ban on the sale of new passenger gas cars and trucks after 2035. It would still allow such vehicles to be owned and sold on the used-car market.

⁵⁹ CARB. 2016. Timeline of AB 32 Scoping Plan Activities. Available at: <https://www.arb.ca.gov/cc/scopingplan/timeline.htm>. Accessed October 13, 2020.

2.2.2.7 2022 Scoping Plan

In November 2022, CARB published California’s 2022 Scoping Plan for Achieving Carbon Neutrality (Third Update).⁶⁰ This update extends the previous Scoping Plans and lays out a path to achieve carbon neutrality no later than 2045, as directed by AB 1279. The previous 2017 Scoping Plan lays out a technologically feasible and cost-effective path to achieve the 2030 GHG reduction target by leveraging existing programs such as the Renewables Portfolio Standard, Advanced Clean Cars, Low Carbon Fuel Standard, Short-Lived Climate Pollutant (SLCP) Reduction Strategy, Cap-and-Trade Program, and Mobile Source Strategy that includes strategies targeted to increase zero emission vehicle fleet penetration. The 2022 Scoping Plan looks toward the 2045 climate goals and the deeper GHG reductions needed to meet the state’s statutory carbon neutrality target specified in AB 1279 and EO B-55-18.

When discussing project-level GHG emissions reduction actions and thresholds, the Third Update states “when a lead agency determines that a proposed project would result in potentially significant GHG impacts due to its GHG emissions or a conflict with state climate goals, the lead agency must impose feasible mitigation measures to minimize the impact.” On November 16, 2022, CARB adopted the 2022 Scoping Plan for Achieving Carbon Neutrality.

2.2.2.8 Regulation for Reducing SF₆ Emissions from Gas Insulated Switchgear

CARB adopted the Regulation for Reducing SF₆ Emissions from Gas-Insulated Switchgear (17 CCR 95350-95359.1) in 2010. The regulation was further amended in 2021 in response to emerging technologies using lower or zero GWPs in gas-insulated equipment (GIE). Key components of the regulation include phasing-out acquisition of SF₆ GIE and expanding the scope of the regulation to include other GHGs used in GIE. While phaseout dates vary based on the configuration (aboveground or belowground) and voltage of the GIE, acquisition of SF₆ GIE will be fully phased out by 2033 unless exempt.

2.2.2.9 Energy Sources

Renewable Portfolio Standard

As most recently amended by SB 1020 (2022), California’s Renewables Portfolio Standard (RPS) requires retail sellers of electric services and local publicly-owned electric utilities to increase procurement from eligible renewable energy resources and zero-carbon resources to 90% of retail sales to California end-use customers by 2036, 100% of retail sales to California end-use customers by 2046, and 100% of retail sales to all state agencies by 2036.

Building Energy Efficiency Standards

The Energy Efficiency Standards for Residential and Nonresidential Buildings, as specified in Title 24, Part 6, of the California Code of Regulations, were established in 1978 in response to a legislative mandate to reduce California’s energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods for building features such as space conditioning, water heating, lighting, and whole envelope. The 2005, 2008, 2013, 2016 and 2019 updates to the efficiency standards included provisions such as cool roofs on commercial buildings, increased use of skylights, and higher efficiency lighting, heating, ventilation and air

⁶⁰ CARB. 2022 Scoping Plan for Achieving Carbon Neutrality. November 2022. Available at: <https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf>

conditioning (HVAC), and water heating systems. Additionally, some standards focused on larger energy saving concepts such as reducing loads at peak periods and seasons and improving the quality of such energy-saving installations. Past updates to the Title 24 standards have proven very effective in reducing building energy use. The 2022 Title 24 standards are the currently applicable building energy efficiency standards, and became effective on January 1, 2023.⁶¹ These standards introduce electric heat pump and electric-ready requirements, expand solar PV system and battery storage standards, and strengthen ventilation standards to improve indoor air quality.

In addition to the California Energy Commission's (CEC's) efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen Building Standard (CALGreen) and establishes voluntary and mandatory standards pertaining to the planning and design of sustainable site development, energy efficiency, water conservation, material conservation, and interior air quality. Like Part 6 of Title 24, the CALGreen standards are periodically updated, with increasing energy savings and efficiencies associated with each code update. The 2022 CALGreen standards took effect on January 1, 2023. The 2022 standards require new multifamily development projects with 20 or more dwelling units to have 10% of parking spaces be EV capable, 25% with low power Level 2 EV charging receptacles, and 5% of parking spaces with Level 2 chargers (see Sections 4.106.4.2.1 and 4.106.4.2.2).⁶²

Appliance Standards

The CEC periodically amends and enforces Appliance Efficiency Regulations contained in Title 20 of the California Code of Regulations. The regulations establish water and energy efficiency standards for both federally regulated appliances and non-federally regulated appliances. The most current Appliance Efficiency Regulations, dated January 2020, cover 24 categories of appliances (e.g., refrigerators; plumbing fixtures; dishwashers; clothes washer and dryers; televisions) and apply to appliances offered for sale in California.⁶³

2.2.2.10 Mobile Sources

Sustainable Communities Strategy Plans

SB 375 (Steinberg, 2008), the Sustainable Communities and Climate Protection Act, coordinates land use planning, regional transportation plans, and funding priorities to reduce GHG emissions from passenger vehicles through better-integrated regional transportation, land use, and housing planning that provides easier access to jobs, services, public transit, and active transportation options. SB 375 specifically requires the Metropolitan Planning Organization (MPO) relevant to the Project area (in this case, the San Luis Obispo Council of Governments [SLOCOG]) to include a Sustainable Communities Strategy (SCS) in its Regional Transportation Plan (RTP) that will achieve GHG emission reduction targets set by

⁶¹ CEC. 2022. California's Energy Efficiency Standards for Residential and Nonresidential Buildings. Available online at: <https://www.energy.ca.gov/programs-and-topics/programs/building-energy-efficiency-standards/2022-building-energy-efficiency>. Accessed February 2023.

⁶² CBSC, 2022. 2022 California Green Building Standards Code, Effective January 1, 2023. <https://www.dgs.ca.gov/BSC/CALGreen>, accessed February 2022.

⁶³ CEC. 2020. 2019 Appliance Efficiency Regulations. Available at: <https://www.energy.ca.gov/programs-and-topics/programs/appliance-efficiency-program-outreach-and-education>. Accessed October 13, 2022.

CARB by reducing vehicle miles travelled (VMT) from light-duty vehicles through the development of more compact, complete, and efficient communities.

In March 2018, CARB approved regional targets of 3% for 2020 and 11% for 2035 for SLOCOG, which will be applied by SLOCOG in future planning cycles.

Low Carbon Fuel Standard

EO S-1-07, as issued by former Governor Schwarzenegger, called for a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by CARB by 2020.⁶⁴ In response, CARB approved the Low Carbon Fuel Standard (LCFS) regulations in 2009, which became fully effective in April 2010. Thereafter, a lawsuit was filed challenging CARB's adoption of the regulations; and, in 2013, a court order was issued compelling CARB to remedy substantive and procedural defects of the LCFS adoption process under CEQA.⁶⁵ However, the court allowed implementation of the LCFS to continue pending correction of the identified defects. In September 2015, CARB re-adopted the LCFS regulations.

2.2.2.11 Solid Waste Diversion

The California Integrated Waste Management Act of 1989, as modified by AB 341 (Chesbro, 2011), requires each jurisdiction's source reduction and recycling element to include an implementation schedule that shows: (1) diversion of 25 percent of all solid waste by January 1, 1995, through source reduction, recycling, and composting activities; (2) diversion of 50 percent of all solid waste on and after January 1, 2000; and (3) source reduction, recycling and composting of 75 percent of all solid waste on or after 2020, and annually thereafter. The California Department of Resources Recycling and Recovery (CalRecycle) is required to develop strategies, including source reduction, recycling, and composting activities, to achieve the 2020 goal.

CalRecycle published a discussion document, entitled *California's New Goal: 75 Percent Recycling*, which identified concepts that would assist the State in reaching the 75 percent goal by 2020. Subsequently, in August 2015, CalRecycle released the *AB 341 Report to the Legislature*, which identifies five priority strategies for achievement of the 75 percent goal: (1) moving organics out of landfills; (2) expanding recycling/ manufacturing infrastructure; (3) exploring new approaches for State and local funding of sustainable waste management programs; (4) promoting State procurement of post-consumer recycled content products; and (5) promoting extended producer responsibility.

2.2.2.12 California Environmental Quality Act Guidelines on Greenhouse Gas Emissions

In 2007, SB 97 was enacted and directed OPR and the California Natural Resources Agency (CNRA) to prepare amendments to the CEQA Guidelines addressing the analysis of GHG emissions under CEQA. Following formal rulemaking, a series of amendments to the CEQA Guidelines were adopted to provide the general framework for the analysis of GHG emissions and became effective in 2010. The amendments do not provide a mandatory, quantitative rubric for GHG emissions analysis, but instead provide general guidance and recognize long-standing CEQA principles regarding the discretion afforded to lead agencies where supported

⁶⁴ Carbon intensity is a measure of the GHG emissions associated with the various production, distribution, and use steps in the "lifecycle" of a transportation fuel.

⁶⁵ *POET, LC v. CARB* (2013) 217 Cal.App.4th 1214.

by substantial evidence. More specifically, CEQA Guidelines Section 15064.4(a) recognizes that the “determination of the significance” of GHG emissions “calls for careful judgment by the lead agency” in accordance with the more general provisions of CEQA Guidelines Section 15064; each agency “shall have discretion to determine” whether to conduct quantitative or qualitative analysis, provided its determination is supported by substantial evidence.

2.2.3 Regional Provisions

2.2.3.1 SLO County APCD Clean Air Plan

SLO County APCD and other air districts prepare clean air plans in accordance with the state and federal Clean Air Acts. The Clean Air Plan is a comprehensive plan that focuses on the closely related goals of protecting public health and protecting the climate. The most recent Clean Air Plan is the 2001 Clean Air Plan adopted by SLO County APCD in December 2001.⁶⁶ The 2001 Clean Air Plan mainly addresses reducing ROG and NO_x emissions to meet the state ozone standard in SLO county, but states that implementing the Plan will also have the ancillary benefit of reducing GHG emissions.

On November 16, 2005, the SLO County APCD published Options for Addressing Climate Change in San Luis Obispo County summarizing current programs that have an ancillary benefit of reducing GHG emissions and potential district actions to specifically address GHG emissions.⁶⁷ Current programs that have been implemented to reduce GHG emissions include the CEQA review process to mitigate emission impacts from land use development projects, District rules to regulate combustion sources, and involvement in the Central Coast Clean Cities Coalition (C5) to promote cleaner alternative fuel technologies.

2.2.3.2 SLO County APCD CEQA Guidelines

SLO County APCD developed quantitative thresholds of significance to assist in review of projects under CEQA in 2012 and updated the guidelines for GHG emissions in the 2021 Interim CEQA GHG Guidance document.⁶⁸ The new GHG thresholds are qualitative and are based on what will be required of new land use development projects to achieve California’s long-term climate goal of carbon neutrality by 2045.

Because the 2012 SLO County APCD CEQA Air Quality Handbook is based on AB 32, which has a target year of 2020, the 2021 Interim CEQA Greenhouse Gas Guidance document was drafted to set thresholds beyond 2020 in SLO county. While the GHG threshold of 10,000 MT CO₂e/yr for permitted stationary sources remains applicable, the quantitative (“bright-line”) thresholds for residential and commercial projects are no longer applicable. The 2021 document establishes three parameters that may be considered to meet CEQA GHG requirements in lieu of the residential and commercial significance threshold. These parameters include:

⁶⁶ SLO County APCD. 2001 Clean Air Plan San Luis Obispo County. Available at: <https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/business/pdf/CAP.pdf>. Accessed October 28, 2022.

⁶⁷ SLO County APCD. 2005. Options for Addressing Climate Change in San Luis Obispo County. Available at: <https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/programs/pdf/GlobalWarmingReport.pdf>. Accessed October 28, 2022.

⁶⁸ SLO County APCD. 2021. Interim CEQA Greenhouse Gas Guidance for the San Luis Obispo County Air Pollution Control District’s 2012 CEQA Air Quality Handbook. Available at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA-GHGInterimGuidance_Final2.pdf. Accessed October 28, 2022.

- Consistency with a Qualified Climate Action Plan: Climate Action Plans conforming to CEQA Guidelines § 15183 and 15183.5 would be qualified and eligible for project streamlining under CEQA.
- No-net Increase: Page 101 of California’s 2017 Climate Change Scoping Plan states that no-net increase in GHG emissions relative to baseline conditions “is an appropriate overall objective for new development”
- Lead Agency Adopted Defensible CEQA GHG Thresholds:
 - Meeting Local GHG Emission Targets with Best Management Practices: Lead agencies may set SB 32-based local GHG emission targets for 2030 by evaluating the GHG inventory for local emission sectors relative to statewide sector inventories and the state’s GHG reduction target of 40% below 1990 levels.
 - GHG Bright-line and Efficiency Thresholds: SB 32-based local bright-line and operational efficiency thresholds can be developed and adopted by evaluating local emission sectors in the local GHG inventory relative to statewide sector inventories and the state’s GHG reduction target of 40% below 1990 levels.

2.2.3.3 SLOCOG Sustainable Communities Strategy (SB 375)

As discussed above, SB 375 is intended to help achieve AB 32’s goals by coordinating land use and transportation planning, along with funding priorities. SB 375 requires each MPO in California to develop a SCS as part of its RTP that will achieve the GHG reduction targets required by AB 32. As described above, the SLOCOG developed an SCS for SLO County, which was incorporated into the 2021 Morro Bay General Plan along with a new RTP.

2.2.4 Local Provisions

2.2.4.1 City of Morro Bay General Plan

The General Plan for the City of Morro Bay contains several environmental management policies aimed at sustainability within the city. They are outlined below⁶⁹:

- POLICY CD-2.2: Flexible Use. Identify potential buildings for future adaptive reuse, and encourage incorporating flexibility in building designs to maximize the future use of buildings.
- POLICY ED-3.1: Sustainable Businesses. Attract and retain environmentally conscious businesses that contribute to the long-term economic and environmental sustainability of Morro Bay
- POLICY ED-3.2: Environmental Guidelines. Develop guidelines that describe desired environmentally conscious building landscapes, designs, features, and practices that will be used to give recommendations to businesses and to provide City staff with suggested conditions of approval for permitting new or significantly renovated homes and businesses.
- POLICY CIR-1.12: Climate Change Impacts on Transportation. Require ongoing evaluation of the transportation infrastructure system and its ability to withstand

⁶⁹ City of Morro Bay. 2021 General Plan and Local Coastal Plan (Plan Morro Bay). Adopted May 25, 2021. Available at: <https://www.morrobayca.gov/DocumentCenter/View/15424/Plan-Morro-Bay-GP-LCP-Final>. Accessed October 31, 2022.

future effects of climate change. Identify future points to begin incorporating resilient strategies and materials into design, using the most up-to-date guidance from the Federal Highway Administration.

- Policy CIR-2.3: Active Transportation Amenities. Provide facilities and amenities for active transportation users at public facilities, including bicycle storage and seating areas. Require new developments or significant renovations to transportation facilities on private commercial or multifamily residential land to incorporate convenient active transportation facilities where possible. (See also Policies LU-8.4 and OS-1.8.)
- POLICY CIR-3.1: LOS (Level of Service) Standards. Update City guidelines to formally adopt an LOS standard.
- POLICY CIR-3.2: VMT Thresholds. Achieve State-mandated reductions in VMT by establishing and adopting a VMT standard.
- POLICY CIR-3.3: Updating Guidelines. Regularly update guidelines for transportation impact analyses to ensure consistency with established metrics and standards.
- POLICY CIR-4.7: Alternative Options. Require or establish EV charging stations, bike sharing and park and ride locations throughout Morro Bay and in particular, close to transit and amenities.
- POLICY C-3.2: Interagency Cooperation. Continue to cooperate with the SLOAPCD and other regional, state, and national agencies to implement the County Clean Air Plan, including enforcing air quality standards and improving air quality
- POLICY C-3.5: Vehicle Idling. Explore and implement strategies to minimize vehicle idling.
- POLICY C-3.6: Air Quality in Sensitive Land Uses. Minimize exposure of sensitive land uses to toxic air contaminants by locating new pollutant sources away from sensitive uses such as schools, hospitals, parks, playgrounds, residential areas, and natural and open space areas.
- POLICY C-3.7: Park and Ride. Support the future development of park and ride lots in Morro Bay. Site lots near commuter transit service and provide bicycle storage lockers at the lots to ensure they are designed to facilitate use by transit and active transportation users
- POLICY C-3.8: Telecommuting. Encourage employers to adopt teleworking, teleconferencing, and telelearning options for their employees and adopt policies and/or programs to further promote teleworking, teleconferencing, and telelearning among City staff.
- POLICY C-4.1: Emissions Reduction Target. By 2040, reduce greenhouse gas emissions by 53.33 percent below the 2020 target, placing the community on a path to meet the state's 2050 greenhouse gas emissions reduction goals.
- POLICY C-4.2: Climate Action Plan. Continue to implement and regularly evaluate the Morro Bay Climate Action Plan and greenhouse gas inventory to

evaluate progress, celebrate successes, and adjust strategies as needed to meet emissions goals

- POLICY C-4.3: Greenhouse Gas Inventory. Continue to update the greenhouse gas inventory to determine whether emissions are within recommended levels.
- POLICY C-4.4: Greenhouse Gas Reduction Strategies. Pursue a variety of greenhouse gas reduction strategies across the transportation, residential, waste, and commercial sectors, commensurate with their share of the community's greenhouse gas emissions.
- POLICY C-4.5: Grant Funding. Seek grant funding to support implementation of greenhouse gas reduction projects for the City, as well as for residents and businesses.
- POLICY C-5.2: Energy Efficiency Standards. Construct all new City facilities to be more energy efficient than the minimum energy efficiency standards in the California Building Standards Code and achieve zero net energy performance for new City facilities when possible
- POLICY C-6.1: Renewable Energy Incentive Programs. Create incentives that promote renewable and sustainable energy systems as a component of new development or reuse projects. Require water- and energy-efficient features in all new and significantly renovated development, such as lowflow and energy-efficient appliances, drought-tolerant vegetation, rooftop solar, and passive heating and cooling features.
- POLICY C-6.2: Renewable Energy in Home and Commercial Uses. Encourage the use of solar energy systems in homes and commercial businesses as a form of renewable energy, including in support of zero net energy goals.
- POLICY C-6.4: Partnerships. Support public/private partnerships to implement energy efficiency, energy storage, and microgrid development to achieve cost savings, reduce energy use, and improve energy reliability.
- POLICY C-8.1: Disposal Rates. Continue to reduce disposal rates to zero.
- POLICY PS-1.4: Climate Change. Consider how climate change impacts may change anticipated hazard conditions when planning for emergency response.
- POLICY EJ-4.1: Plan Updates. Recognize and address the health effects of climate change when updating local hazard mitigation plans, hazard emergency plans, specific plans, and other policies and ordinances

3. IMPACTS AND MITIGATION MEASURES

3.1 Standards of Significance

3.1.1 CEQA Guidelines Appendix G Thresholds

As described in Section 2.2, the 2009 amendments to the state CEQA Guidelines do not establish specific thresholds of significance for GHG impacts. Rather, Section 15064.4 of the CEQA Guidelines emphasizes 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.⁷⁰ It further recommends that lead agencies focus their analysis on the reasonably foreseeable incremental contribution of a project's emissions to the effects of climate change. Appendix G of the CEQA Guidelines, the Environmental Checklist Form, is often used as a basis for lead agencies' selection of significance thresholds, but it does not prescribe specific thresholds. Rather, Appendix G suggests evaluating whether a project would:

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

Guidelines section 15064.4(b) states that in evaluating the significance of impacts from GHG emissions, the lead agency should consider the following factors, among others:

- The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of GHG emissions.

3.1.2 SLO County APCD Significance Threshold

SLO County APCD presents its thresholds of significance along with methods for evaluating compliance in its guidance document entitled Interim CEQA Greenhouse Gas Guidance for the San Luis Obispo County Air Pollution Control District's 2012 CEQA Air Quality Handbook.⁷¹ The revised guidelines provide two thresholds for land use projects based on either whether the project is a permitted stationary source or whether it is residential or commercial. Permitted stationary sources have a significance threshold of 10,000 MT CO₂e/yr based on emission reductions necessary to meet EO S-03-05, which sets a goal of 80% below 1990 levels by 2050. SLO County APCD previously had a bright-line threshold of

⁷⁰ CNRA. 2009. Revised Text of Proposed Guideline Amendments. Sacramento, CA. http://resources.ca.gov/ceqa/docs/FINAL_Text_of_Proposed_Amendments.pdf. Accessed August 2022.

⁷¹ SLO County APCD. 2021. Interim CEQA Greenhouse Gas Guidance for the San Luis Obispo County Air Pollution Control District's 2012 CEQA Air Quality Handbook. https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA-GHGInterimGuidance_Final2.pdf. Accessed October 2022.

1,150 MT CO₂e/yr and an efficiency threshold of 4.9 MT CO₂e/yr per service population. However, because these thresholds were derived from AB 32, which sets emission reduction goals by 2020, they are no longer valid for projects with a scope beyond 2020. In lieu of the significance thresholds, SLO County APCD considers several parameters in CEQA evaluations.⁷² These parameters may include:

- Consistency with a Qualified Climate Action Plan: Climate Action Plans conforming to CEQA Guidelines § 15183 and 15183.5 would be qualified and eligible for project streamlining under CEQA.
- No-net Increase: Page 101 of California’s 2017 Climate Change Scoping Plan states that no-net increase in GHG emissions relative to baseline conditions “is an appropriate overall objective for new development”
- Lead Agency Adopted Defensible CEQA GHG Thresholds:
 - Meeting Local GHG Emission Targets with Best Management Practices: Lead agencies may set SB 32-based local GHG emission targets for 2030 by evaluating the GHG inventory for local emission sectors relative to statewide sector inventories and the state’s GHG reduction target of 40% below 1990 levels.
 - GHG Bright-line and Efficiency Thresholds: SB 32 based local bright-line and operational efficiency thresholds can be established by evaluating local emission sectors in a jurisdiction’s GHG inventory relative to statewide sector inventories and the state’s GHG reduction target of 40% below 1990 levels.

3.1.3 Thresholds and Approaches Used in Assessment

Achieving SB 32 and the Executive Orders’ 2045 and 2050 GHG emissions reduction goals will require systemic changes in how energy is produced and consumed through all sectors of the economy (as discussed in greater detail in the impact analysis below). Because the mix of technologies, strategies, and policy choices the state will ultimately choose to implement to achieve the post-2030 goals are not readily ascertainable at this time, any accounting of future GHG emissions from an individual development project cannot yet reflect the scope and scale of reductions that may occur as the state transitions toward new regulations designed to achieve the new long-term goals. However, as described above, SLO County APCD has updated its GHG guidelines to adhere to SB 32, EO B-55-18, and EO S-3-05.

Because the Vistra BESS project is not considered a permitted stationary source and the GHG significance threshold of residential and commercial projects no longer applies, this GHG analysis will be qualitative and follow the alternative thresholds described in the 2021 Interim CEQA Greenhouse Gas Guidance document. These alternative thresholds are described in further detail in the above section, 3.1.2 SLO County APCD Significance Thresholds.

As one of the alternative thresholds, SLO County APCD proposes meeting CEQA requirements by evaluating projects against best management practices established by the Sacramento Metropolitan Air Quality Management District (SMAQMD) in its Greenhouse Gas

⁷² SLO County APCD. 2021. Interim CEQA Greenhouse Gas Guidance for the San Luis Obispo County Air Pollution Control District’s 2012 CEQA Air Quality Handbook. Available at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA-GHGInterimGuidance_Final2.pdf. Accessed November 7, 2022.

Thresholds for Sacramento County document.⁷³ This document discusses commercial and residential sector emission reductions needed from new developments to help achieve SB 32 goals and establishes best management practices for new developments to help achieve these emission reductions.

To evaluate the impact of the Project on GHG emissions, consistency with the best management practices in the SMAQMD Greenhouse Gas Thresholds for Sacramento County document were evaluated, as recommended by the SLO County APCD. SMAQMD thresholds stipulate that all projects must implement certain best management practices (BMPs) for GHG emissions in the project design. Then, projects must demonstrate that annual emissions are lower than 1,100 MT CO_{2e}/yr. If a project exceeds this threshold, it must integrate an additional BMP in the project design. If a project does not exceed this threshold, impacts should be considered less than significant. In addition, SMAQMD provides thresholds for construction-related emissions. Projects with annual construction emissions less than 1,100 MT CO_{2e}/yr would have less than significant impacts. The analysis combines a qualitative discussion comparing best management practices and practices that will be used for the Project's operation, as well as a comparison of the Project's estimated operational and construction-related GHG emissions against the SMAQMD quantitative threshold.

Analysis of the Project's GHG emissions is based primarily on default values in the California Emission Estimator Model (CalEEMod®) version 2022.1. and the latest version of Emission Factors Model version 2021 (EMFAC2021), which have not been updated for the most recent executive orders, specifically EO N-79-20 which bans the sale of gasoline-powered cars in California by 2035, and the newly implemented CARB rules; and EO B-55-18 which set as a goal carbon neutrality in California by 2045. Both EOs, if implemented, will change the energy mix in California for future operations at the Proposed Project. However, as there is insufficient information to incorporate these executive orders into this analysis, to do so would be speculative. Accordingly, this GHG analysis has been conducted with the most recent available tools prepared and accepted by the regulatory agencies. CalEEMod® outputs are included as **Appendix B**.

3.2 Impact Evaluation

3.2.1 Impact GHG-1

Impact GHG-1: The Project Would Not Generate GHG Emissions, Either Directly or Indirectly, that Would Make a Cumulatively Considerable Contribution to Global Climate Change (Less than Significant with Mitigation)

The Project has been evaluated for consistency with the best management practices (BMPs) as described in the SMAQMD Greenhouse Gas Thresholds for Sacramento County.⁷⁴ The SMAQMD BMPs consist of two tiers: one tier applies to all projects and another tier applies to large or inefficient projects that exceed 1,100 MT CO_{2e}/year prior to implementation of BMP 1 and 2. Emissions were estimated using CalEEMod® version 2022.1. This is the most recent

⁷³ Sacramento Metropolitan Air Quality Management District. 2020. Greenhouse Gas Thresholds for Sacramento County. Available at: <https://www.airquality.org/LandUseTransportation/Documents/SMAQMDGHGThresholds2020-03-04v2.pdf>. Accessed November 7, 2022

⁷⁴ Sacramento Metropolitan Air Quality Management District. 2020. Greenhouse Gas Thresholds for Sacramento County. Available at: <https://www.airquality.org/LandUseTransportation/Documents/SMAQMDGHGThresholds2020-03-04v2.pdf>. Accessed November 7, 2022

version of the emissions estimation software recommended by SLO County APCD.⁷⁵ Where available, the analysis used project-specific information for each phase of the construction program and for operation and maintenance of the facility provided by the project sponsor; otherwise, defaults were used.

Table 1. 2020 SMAQMD Greenhouse Gas Thresholds BMPs Consistency Analysis

Tier	Best Management Practice	Consistency
Tier 1: BMPs Required for all Projects	BMP 1: No natural gas: Projects shall be designed and constructed without natural gas infrastructure.	Consistent. The Project is a Battery Energy Storage System (BESS) and will not be designed and constructed with natural gas infrastructure.
	BMP 2: Electric vehicle ready: Projects shall meet the current CalGreen Tier 2 standards, except all EV Capable spaces shall instead be EV Ready.	Consistent. The Project will be designed to be consistent with the CalGreen Tier 2 requirements.
Tier 2: BMP Required for Large or Inefficient Projects⁷⁶	BMP 3: As described in more detail in Section 4.3.1, residential projects shall achieve a 15% reduction in VMT per resident, and office projects should achieve a 15% reduction in VMT per worker compared to existing average VMT per capita for the county, or for the city if a more local SB 743 target has been established. Retail projects should achieve no net increase in total VMT, as required to show consistency with SB 743.	Not Applicable. The Project GHG emissions are 1,094 MT CO ₂ e/year, which does not exceed 1,110 MT CO ₂ e/year prior to implementation of BMP 1 and 2. Therefore, BMP 3 is not required.

3.2.2 Impact GHG-2

Impact GHG-2: The Project Would Be Consistent with the Plans, Policies, and Regulations Adopted for the Purpose of Reducing GHG Emissions. (Less than Significant)

The Project has been evaluated for consistency with the following plans, policies, and regulations:

- 2022 CARB Scoping Plan adopted under AB32
- City of Morro Bay 2021 General Plan
- SLOCOG 2019 Sustainable Communities Strategy/ Regional Transportation Plan
- Executive Order S-3-05

⁷⁵ SLO County APCD. 2023. Land Use and CEQA. Available at: <https://www.slocleanair.org/rules-regulations/land-use-ceqa.php>. Accessed February 22, 2023

⁷⁶ The SMAQMD defines large or inefficient projects as projects that emit more than 1,100 MT CO₂e/year; generate or attract more than 110 trips per day; residential and office projects in areas with high VMT; and residential, retail, office, or mixed-use projects greater than ½ mile walking distance from an existing major transit stop.

- Executive Order B-30-15
- Executive Order B-55-18
- SB 32

Each plan, policy, and regulation is described in detail in Section 2.2, above. A discussion of Project consistency with each plan, policy, and regulation is presented below.

2017 CARB Scoping Plan

The AB 32 Scoping Plan identified over 70 measures for reducing GHG emissions to 1990 levels by 2020. The 2017 CARB Scoping Plan is an update to the AB 32 Scoping Plan and identifies measures to reduce GHG emissions to 40% below 1990 levels by 2030. **Table 2** evaluates the Proposed Project’s consistency with the 2017 Scoping Plan.

Table 2. 2022 CARB Scoping Plan Consistency Analysis

Scoping Plan Reduction Measure	Consistency
Deploy Zero Emission Vehicles (ZEVs) for light-duty and heavy-duty vehicles. The ZEV mandates requires 100% of LDV sales are ZEV by 2035, and 100% of MDV/HDV sales are ZEV by 2040	Consistent. The Proposed Project will meet the latest CalGreen Tier 2 requirements which will improve EV charging infrastructure and contribute to state ZEV goals.
Smart Growth / Vehicle Miles Traveled (VMT) Expanding the SB375, the 2022 Scoping Plan requires VMT per capita reduced 25% below 2019 levels by 2030, and 30% below 2019 levels by 2045	Consistent. The Proposed Project would not substantially increase VMT because only minor work-related trips would occur long-term. Because of the negligible nature of these trips, the Proposed Project would not conflict with SB375’s VMT reduction goals.
Electricity Generation. As required by SB 350, SB 100, and SB 1020, Utilities subject to the legislation will be required to increase their renewable energy share and reduce GHG in the electric generation sector to 38 million metric tons of carbon dioxide equivalent (MMTCO _{2e}) in 2030 and 30 MMTCO _{2e} in 2035	Not applicable/Enabling. This measure would apply to utilities and not to individual development projects. However, the Proposed Project would store renewable electricity (e.g., from solar panels), which would help the utility meet the renewable energy mandates in SB 350, SB 100, and SB 1020
Decarbonize Residential and Commercial Buildings. New residential buildings to use all electric appliances beginning in 2026 and New commercial buildings to use all electric appliance beginning in 2029	Not applicable/Enabling. This measure is not directly applicable to the Proposed Project; however, the Proposed Project will contribute to decarbonization goals by increasing capacity for renewable energy in the state.
Construction Equipment. Reduce demand for fossil energy and GHGs and improve air quality.	Consistent. The Proposed Project will use construction equipment with engines that are compliant with CARB Tier 4 Interim standards, achieving compliance with local air quality limits.
Low Carbon Fuels for Transportation. To use biomass supply to produce conventional and advanced biofuels, as well as hydrogen.	Not applicable. This measure would mainly apply to fuel suppliers and not to individual development projects.

Table 2. 2022 CARB Scoping Plan Consistency Analysis

Scoping Plan Reduction Measure	Consistency
<p>Reduce non-combustion Emissions and High GWP Potential Emissions. Following SB 1383: Reduce short-lived climate pollutants mandates, to increase landfill and dairy digester methane capture. Moderate adoption of enteric strategies by 2030. Divert 75% of organic waste from landfills by 2025. Oil and gas fugitive methane emissions reduced 50% by 2030 and further reductions as infrastructure components. Low GWP refrigerants are introduced as building electrification increases, to mitigate HFC emissions.</p>	<p>Not applicable/Enabling. This measure would mainly apply to the agricultural industry. However, the Proposed Project will not include natural gas infrastructure, so can minimize methane emissions. The Proposed Project is subject to the latest Title 24 Building Codes, which requires the usage of low-GWP refrigerants.</p>
<p>Natural and Working Lands (NWLs). A series of land management actions identified by the 2022 Scoping Plan. Key actions include: conserve 30% of the state’s NWL and coastal waters by 2030; land conversion at 50% of the Reference Scenario land conversion rate; increase urban forestry investment by 200% above current levels and utilize tree watering that is 30% less sensitive to drought; and no land conversion of forests, shrublands/chaparral, or grasslands.</p>	<p>Not applicable. The Proposed Project site will be built on a site that is already developed.</p>
<p>Carbon Dioxide Removal and Capture. 2022 legislation on carbon removal and sequestration, including: AB 1279, SB 905, SB 1137 and AB 1757 signed by Governor Newsom, indicated that CO₂ removal and carbon capture are important tools to compensate remaining GHG emissions to achieve carbon neutrality.</p>	<p>Not applicable. The Project does not propose to construct any CCS/CDR facilities directly.</p>

Notes:

^A CARB. 2022. California’s 2022 Climate Change Scoping Plan. Available at: <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents>

As shown in **Table 2**, the Proposed Project is consistent with the 2022 CARB Scoping Plan reduction measures where applicable.

City of Morro Bay 2021 General Plan

As described in Section 2.2.4, the City of Morro Bay 2021 General Plan was established to preserve the identity and resources of the City while moving toward more sustainable policies. The Plan includes several goal areas aimed at GHGs within the city that are relevant to the Proposed Project. Assessment of consistency is shown in **Table 3** below.

Table 3. City of Morro Bay 2021 General Plan Consistency Analysis

Goal Area	General Plan Goals and Policies	Consistency
Community Design	CD-2.2: Flexible Use. Identify potential buildings for future adaptive reuse, and encourage incorporating flexibility in building designs to maximize the future use of buildings.	Not applicable. This measure applies to the City, not individual projects.
Economic Development	ED-3.1: Sustainable Businesses. Attract and retain environmentally conscious businesses that contribute to the long-term economic and environmental sustainability of Morro Bay	Consistent. The Vistra BESS Project supports the implementation of California RPS and ensures sustainable energy use.
	ED-3.2: Environmental Guidelines. Develop guidelines that describe desired environmentally conscious building landscapes, designs, features, and practices that will be used to give recommendations to businesses and to provide City staff with suggested conditions of approval for permitting new or significantly renovated homes and businesses.	Not applicable. This measure applies to the City, not individual projects.
Circulation	CIR-1.12: Climate Change Impacts on Transportation. Require ongoing evaluation of the transportation infrastructure system and its ability to withstand future effects of climate change. Identify future points to begin incorporating resilient strategies and materials into design, using the most up-to-date guidance from the Federal Highway Administration	Not applicable. This measure applies to the City, not individual projects.
	CIR-3.1: Level of Service (LOS) Standards. Update City guidelines to formally adopt an LOS standard.	Not applicable. This measure applies to the City, not individual projects.
	CIR-3.2: VMT Thresholds. Achieve State-mandated reductions in VMT by establishing and adopting a VMT standard.	Not applicable. This measure applies to the City, not individual projects.
	CIR-3.3: Updating Guidelines. Regularly update guidelines for transportation impact analyses to ensure consistency with established metrics and standards.	Not applicable. This measure applies to the City, not individual projects.
	CIR-4.7: Alternative Options. Require or establish EV charging stations, bike sharing and park and ride locations throughout Morro Bay and in particular, close to transit and amenities.	Consistent. The Project will meet current CalGreen Tier 2 standards except all EV Capable spaces shall instead be EV Ready.
Conservation	C-3.2: Interagency Cooperation. Continue to cooperate with the SLOAPCD and other regional, state, and national agencies to implement the County Clean Air Plan, including enforcing air quality standards and improving air quality.	Consistent. The Project includes full air quality CEQA analyses and will mitigate any significant impacts to the extent feasible.

Goal Area	General Plan Goals and Policies	Consistency
	<p>C-3.5: Vehicle Idling. Explore and implement strategies to minimize vehicle idling.</p>	<p>Consistent. Vehicles during construction and demolition will be limited from idling for more than five minutes at any given location pursuant to the 2004 CARB Airborne Toxics Control Measure (ATCM) to Limit Diesel-Fueled Commercial Motor Vehicle Idling.</p>
	<p>C-3.7: Park and Ride. Support the future development of park and ride lots in Morro Bay. Site lots near commuter transit service and provide bicycle storage lockers at the lots to ensure they are designed to facilitate use by transit and active transportation users</p>	<p>Not applicable. This measure applies to the City, not individual projects.</p>
<p>Conservation</p>	<p>C-4.1: Emissions Reduction Target. By 2040, reduce greenhouse gas emissions by 53.33 percent below the 2020 target, placing the community on a path to meet the state's 2050 greenhouse gas emissions reduction goals.</p>	<p>Consistent. The Project will follow SLO County APCD GHG thresholds and guidelines as described in the 2021 Interim Greenhouse Guidance for the SLO County APCD 2021 CEQA Air Quality Handbook</p>
	<p>C-4.2: Climate Action Plan. Continue to implement and regularly evaluate the Morro Bay Climate Action Plan and greenhouse gas inventory to evaluate progress, celebrate successes, and adjust strategies as needed to meet emissions goals</p>	<p>Not applicable. This measure applies to the City, not individual projects.</p>
	<p>C-4.3: Greenhouse Gas Inventory. Continue to update the greenhouse gas inventory to determine whether emissions are within recommended levels.</p>	<p>Not applicable. This measure applies to the City, not individual projects.</p>
	<p>C-4.4: Greenhouse Gas Reduction Strategies. Pursue a variety of greenhouse gas reduction strategies across the transportation, residential, waste, and commercial sectors, commensurate with their share of the community's greenhouse gas emissions.</p>	<p>Consistent. The Project will meet current CalGreen Tier 2 standards except all EV Capable spaces shall instead be EV Ready.</p>
	<p>C-4.5: Grant Funding. Seek grant funding to support implementation of greenhouse gas reduction projects for the City, as well as for residents and businesses</p>	<p>Not applicable. This measure applies to the City, not individual projects.</p>
	<p>C-5.2: Energy Efficiency Standards. Construct all new City facilities to be more energy efficient than the minimum energy efficiency standards in the California Building Standards Code and achieve zero net energy performance for new City facilities when possible</p>	<p>Not applicable. This measure applies to the City, not individual projects.</p>

Goal Area	General Plan Goals and Policies	Consistency
	C-6.1: Renewable Energy Incentive Programs. Create incentives that promote renewable and sustainable energy systems as a component of new development or reuse projects. Require water- and energy-efficient features in all new and significantly renovated development, such as lowflow and energy-efficient appliances, drought-tolerant vegetation, rooftop solar, and passive heating and cooling features.	Not applicable. This measure applies to the City, not individual projects.
	C-6.4: Partnerships. Support public/private partnerships to implement energy efficiency, energy storage, and microgrid development to achieve cost savings, reduce energy use, and improve energy reliability.	Not applicable. This measure applies to the City, not individual projects.
	C-8.1: Disposal Rates. Continue to reduce disposal rates to zero.	Not applicable. This measure applies to the City, not individual projects.
Public Safety	PS-1.4: Climate Change. Consider how climate change impacts may change anticipated hazard conditions when planning for emergency response.	Not applicable. This measure applies to the City, not individual projects.
Environmental Justice	EJ-4.1: Plan Updates. Recognize and address the health effects of climate change when updating local hazard mitigation plans, hazard emergency plans, specific plans, and other policies and ordinances	Not applicable. This measure applies to the City, not individual projects.

2019 SLOCOG RTP/SCS

SB 375, the Sustainable Communities and Climate Protection Act of 2008, supports the State’s climate action goals to reduce GHG emissions through coordinated transportation and land use planning. SB 375 required CARB to establish GHG emission reduction targets (Regional Targets) for each metropolitan planning region. On September 23, 2010, CARB adopted Regional Targets applying to the years 2020 and 2035.⁷⁷ In 2011, CARB adopted Regional Targets of 3% for 2020 and 11% for 2035 for the area under SLOCOG’s jurisdiction, which includes the Project site.

SB 375 requires MPOs including the SLOCOG to incorporate a SCS in their RTPs that will achieve the GHG emission Reduction Targets set by CARB, primarily by reducing VMT from light-duty vehicles through development of more compact, complete, and efficient communities.

The Project is located within the City of Morro Bay’s existing city boundary. **Table 4** evaluates the Proposed Project’s consistency with the 2019 RTP/SCS.

⁷⁷ CARB. 2010. Sustainable Communities. Available at: <http://www.arb.ca.gov/cc/sb375/sb375.htm>. Accessed October 13, 2020.

Table 4. 2019 RTP/SCS Consistency Analysis

Goal	#	Policy Objectives	Consistency
Preservation			
1. Preserve the transportation system	1.1	Maintain and maximize efficiency of existing transportation system and operations.	Not applicable.
	1.2	Employ low-cost solutions whenever possible, including transportation demand management principles.	
	1.3	Preserve the region's transportation system to a state of good repair.	
Mobility			
2. Improve intermodal mobility and accessibility for all people.	2.1	Provide reliable, integrated, and flexible travel choices across and between modes.	Not applicable.
	2.2	Improve opportunities for businesses and citizens to easily access goods, jobs, services, and housing.	
	2.3	Integrate new technologies and concepts to make the transportation system more efficient and accessible.	
	2.4	Identify and improve major transportation corridors for all users.	
	2.5	Support cooperative planning activities that lead to an integrated intermodal transportation system.	
Economy			
3. Support a vibrant economy.	3.1	Support transportation investments and choices to enhance economic activity, travel, and tourism.	Not applicable.
	3.2	Improve the freight network and strengthen the region's ability to access national and international trade markets.	
Safety			
4. Improve public safety and security.	4.1	Reduce fatalities, serious injuries, and collisions for motorized and non-motorized users.	Not applicable.
	4.2	Reduce congestion and increase safety by improving operations.	
	4.3	Enhance public safety and security in all modes of transportation	
Healthy Communities			
5. Foster livable, healthy communities and promote social equity	5.1	Reflect community values while integrating land use and transportation planning to connect communities through a variety of transportation choices that promote healthy lifestyles.	Not applicable.
	5.2	Integrate public health and social equity in transportation planning and decision-making.	
	5.3	Support efforts to increase the supply and variety of housing, jobs, and basic services in locations that reduce trips, travel distances, and congestion on U.S. Route 101.	

Table 4. 2019 RTP/SCS Consistency Analysis

Goal	#	Policy Objectives	Consistency
	5.4	Make investments and develop programs that support local land use decisions that implement the SCS and other strategies to reduce GHG emissions and make our communities more healthy, livable, sustainable, and mobile.	Consistent. The proposed project would install a battery energy storage system, which would reduce the amount of fossil fuels consumed during peak hours and maximize renewable energy usage.
Environment			
6. Practice environmental stewardship.	6.1	Integrate environmental considerations in all stages of planning and implementation.	Consistent. The Project will be designed, constructed, and operated in a sustainable manner.
	6.2	Preserve aesthetic resources and promote environmental enhancements.	Consistent. The Project would be built on disturbed land and would demolish components of an old power plant. The new BESS would not hinder aesthetic resources and would promote environmental enhancements.
	6.3	Reduce GHG emissions from vehicles and improve air quality in the region.	Not applicable/Enabling. The Project would indirectly improve air quality in the region by reducing its reliance on fossil fuels. While some additional trips will be added during operations for ongoing maintenance, the additional trips are minimal and would have a negligible effect in the region.
	6.4	Conserve and protect natural, sensitive, and agricultural resources.	Not applicable/Enabling. While the Project would not directly conserve and project these resources, by decreasing the region's reliance on fossil fuels, the Project would be an indirect benefit.
Fiscally Responsible			
7. Practice financial stewardship	7.1	Invest strategically to optimize transportation system performance for the long-term.	Not applicable.
	7.2	Assure early and continual involvement of all parties affected by major transportation improvement projects and programs.	
	7.3	Seek sustainable, flexible, and competitive funding to maintain and improve the transportation system.	

Source:

SLOCOG. 2019. 2019 RTP: Connecting Communities. Available at:
<https://www.dropbox.com/s/oc6i8wshikuirsh/FINAL%202019%20RTP.pdf?dl=0>

As shown in Table 4, the Proposed Project would be consistent with the 2019 RTP/SCS where applicable.

Executive Order B-30-15 and SB 32

In April 2015, Governor Brown signed Executive Order B-30-15, which established the following GHG emission reduction goal for California: by 2030, reduce GHG emissions to 40 percent below 1990 levels. This Executive Order also directed all state agencies with jurisdiction over GHG-emitting sources to implement measures designed to achieve the new interim 2030 goal, as well as the pre-existing, long-term 2050 goal identified in Executive Order S-3-05 (see discussion below). Additionally, the Executive Order directed CARB to update its Scoping Plan to address the 2030 goal. SB 32 codifies the 2030 emissions reduction goal of Executive Order B-30-15 requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030.

The Project's 2030 emissions total represents the emissions inventory for the Project at full build-out. As explained in the preceding impact analysis, the Project emissions would be consistent with a trajectory needed to achieve the State's 2030 requirements. Several regulatory requirements reduce the Project's emissions and help ensure that the State's 2030 GHG target is achieved, including the following:

- SB 1020 requires retail sellers of electric services to increase procurement from eligible renewable energy resources and zero-carbon resources to 90% of retail sales to California end-use customers by 2036
- CPUC, CEC, and CARB have a shared, established goal of achieving zero net energy (ZNE).

The measures above will all help ensure that the State meets the 2030 GHG target. The Project will be consistent with all of these initiatives and regulatory requirements.

Executive Order S-3-05 and B-55-18

This report also evaluates the Project's consistency with Executive Order No. S-3-05's goal of reducing the State's GHG emissions to 80 percent below the 1990 level by the year 2050; and Executive Order No. B-55-18's goal of reducing the State's GHG emissions to net carbon neutral by the year 2045 and maintain net negative emissions thereafter. Based on existing emissions trends, the Project's emissions are expected to decline from 2030 through at least 2050 due to continued regulatory and technological advancements. Therefore, the Project is unlikely to obstruct the attainment of the State's long-term GHG reduction goal for 2045 or 2050.

In 2004, (prior to the 2006 passage of AB 32) California was emitting 12 percent more GHG emissions than in 1990.⁷⁸ For California to emit 80 percent less than it emitted in 1990, the statewide GHG emissions would be only 18 percent of the 2004 statewide GHG emissions. Accounting for a population growth from 35,840,000 people in 2004 to approximately 55,000,000 people in 2050, the emissions per capita would have to be only 12 percent of what they were in 2004. This means 88 percent reductions in per capita GHG emissions from 2004 emissions intensities must be realized in order to achieve California's 2050 GHG goals.

⁷⁸ CARB. 2007. California Greenhouse Gas Inventory – By IPCC Category. 1990-2004 Inventory. Available at: https://ww3.arb.ca.gov/cc/inventory/archive/tables/ghg_inventory_ipcc_90_04_sum_2007-11-19.pdf. Accessed October 13, 2020.

The reductions need be even more stringent to meet the net zero emission 2045 goals. Clearly, energy efficiency and reduced VMT will play important roles in achieving this aggressive goal, but the decarbonization of fuel will also be necessary.

The extent to which GHG emissions from mobile sources indirectly attributed to the Project will change in the future depends on the quantity (e.g., number of vehicles, average daily mileage) and quality (i.e., carbon content) of fuel that will be available and required to meet both regulatory standards and workers' needs. In addition, renewable power requirements, low carbon fuel standards, and vehicle emissions standards discussed above will all decrease GHG emissions per unit of energy delivered or per VMT. Due to the technological shifts required and the unknown parameters of the regulatory framework in 2050, quantitatively analyzing a Project's impacts further relative to the 2050 target are speculative for purposes of CEQA.

That being said, studies have shown that, in order to meet the 2050 target, aggressive technology changes in the transportation and energy sectors, such as electrification and maturation of technologies still in development (e.g., advanced batteries and more efficient biofuels), will be required. A 2015 study shows that the existing and proposed regulatory framework will allow the State to reduce GHG emissions to 40 percent below 1990 levels by 2030, and to 60 percent below 1990 by 2050.⁷⁹ Even though this study did not provide a regulatory and technology roadmap to achieve the Governor's 2050 goal, it demonstrated that various combinations of policies could allow Statewide emissions to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the study could allow the State to meet the Governor's 2050 goal. In August 2020, Energy + Environmental Economics (E3) developed modeling scenarios for CARB that demonstrate potential pathways for the State to achieve the 2045 and 2050 targets. These scenarios all require ambitious reductions including "high levels of energy efficiency across all sectors, high levels of renewable electricity generation, high levels of electrification in the transportation and buildings sector, and deep reductions in non-energy, non-combustion GHG emissions like methane CH₄ and HFCs. As a result, all scenarios achieve at least an 80% reduction in gross GHG emissions (under AB 32) by 2045".⁸⁰

While it would be speculative to quantitatively estimate the Project's emissions level in 2045 and 2050 and to assess the impacts to the Executive Order's horizon-year goals, statewide efforts are underway to facilitate the State's achievement of these goals and it is reasonable to expect the Project's emissions level to decline as the regulatory initiatives identified by CARB in the First Update to the Climate Change Scoping Plan and 2017 Scoping Plan are implemented, and other technological innovations occur. Many of these initiatives include reducing the carbon content of motor fuels and fuels for electricity generation. Reducing the carbon content of motor fuels and fuels for electricity generation will reduce CO_{2e} emissions from this Project over time. Stated differently, the Project's emissions total at build-out represents the maximum emissions inventory for the Project as California's emissions sources are being regulated (and foreseeably expected to continue to be regulated in the

⁷⁹ Jeffery Greenblatt. 2015. Modeling California Impacts on Greenhouse Gas Emissions. Energy Policy. Volume 78, March 2015, pages 158-172. Abstract available at: <http://www.sciencedirect.com/science/article/pii/S0301421514006892>. Accessed: October 13, 2020.

⁸⁰ E3. 2020. Achieving Carbon Neutrality in California: PATHWAYS Scenarios Developed for the California Air Resources Board. Available at: https://ww2.arb.ca.gov/sites/default/files/2020-08/e3_cn_draft_report_aug2020.pdf. Accessed: October 13, 2020.

future) in furtherance of the State's environmental policy objectives. Given the reasonably anticipated decline in Project emissions once fully constructed and operational, the Project is consistent with the Executive Orders horizon-year goals.

For example, CARB's First Update to the Scoping Plan "lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050." And many of the emission reduction strategies recommended by CARB would serve to reduce the Project's post-2020 emissions level to the extent applicable by law:

- Energy Sector: Continued improvements in California's appliance and building energy efficiency programs and initiatives would serve to reduce the Project's emissions level. Additionally, further additions to California's renewable resource portfolio would favorably influence the Project's emissions level.
- Transportation Sector: Anticipated deployment of improved vehicle efficiency, zero emission technologies, lower carbon fuels, and improvement of existing transportation systems all will serve to reduce the Project's emissions level.
- Water Sector: The Project's emissions level will be reduced as a result of further desired enhancements to water conservation technologies.
- Waste Management Sector: Plans to further improve recycling, reuse and reduction of solid waste will beneficially reduce the Project's emissions level.

In addition to CARB's First Update, in January 2015, during his inaugural address, Governor Jerry Brown expressed a commitment to achieve "three ambitious goals" that he would like to see accomplished by 2030 to reduce the State's GHG emissions: (1) increasing the State's RPS from 33 percent in 2020 to 50 percent in 2030; (2) cutting the petroleum use in cars and trucks in half; and (3) doubling the efficiency of existing buildings and making heating fuels cleaner. Two of these expressions of Executive Branch policy – (1) and (3) – already have been manifested in adopted legislative action (i.e., SB 350). SB 100 and SB 1020 further increased the emissions reductions for (1), while Governor Newsom's 2020 EO N-79-20 sets the stage to improve upon the target set in (2).

Battery storage is used to store energy during off-peak hours when energy usage/demand is lower and dispatch stored energy on an as-needed basis during peak demand hours. This technology reduces the amount of fossil fuels consumed during peak hours and maximizes usage of energy from renewable sources, such as wind and solar facilities that may not be able to produce energy during times of peak demand. The proposed project would accelerate California's decarbonization efforts by increasing the battery storage capacity in the state.

In summary, because the Project meets and exceeds the emissions reduction targets presented in this report for earlier years, and because many aspects of the Project's emissions inventory will benefit from further regulatory and technological advancements, the Project is not expected to obstruct the attainment of the Governor's long-term GHG reduction goal for 2050. Therefore, the Project's impacts are **less than significant** under this methodology.

APPENDIX A
GREENHOUSE GAS CALCULATION TABLES

Table 1
Land Use Summary
Vistra BESS
Morro Bay, California

Land Use¹	CalEEMod Land Use	Size	Units
Industrial	User Defined Industrial	273	1000sqft

Notes:

¹. Land uses analyzed based on information provided by the Project Sponsor. The site location is shown in Figure 1.

**Table 2
Construction Schedule
Vistra BESS
Morro Bay, California**

Construction Subphase¹	CalEEMod Subphase	Start Date	End Date	Year	Number of Work Days	Days per Week
Fencing and Site Preparation	Site Preparation	9/30/2023	10/31/2023	2023	22	5
Foundation and Pile Installation	Grading	11/1/2023	7/30/2024	2024	195	5
BESS, substation, and Gen-tie installation	Building Construction	7/31/2024	7/31/2026	2026	523	5
	Paving	8/1/2026	8/28/2026	2026	20	5
	Architectural Coating	8/29/2026	9/30/2026	2026	23	5
Demolition of Existing Power Plant Stacks	Demolition	10/30/2026	5/31/2028	2028	414	5

Notes:

¹. All construction phasing information was provided by the Project Sponsor. Construction is generally expected to occur between 7am-7pm Monday-Friday per San Luis Obispo County's construction ordinance.

**Table 3
Construction Equipment and Usage
Vistra BESS
Morro Bay, CA**

Anticipated Construction Start Date:	9/30/2023
---	------------------

Construction Subphase(s)	Equipment Name¹	CalEEMod Equipment Name²	Fuel³	Number¹	Horsepower¹	Daily Usage (hours/day)¹	Utilization⁴	Controlled Engine Tier⁵
Site Preparation	Scrapers	Scrapers	Diesel	2	500	8	100%	Tier 4 Interim
	Bulldozers	Rubber Tired Dozers	Diesel	6	300	8	100%	Tier 4 Interim
	Graders	Graders	Diesel	6	250	8	100%	Tier 4 Interim
	Front End Loaders	Rubber Tired Loaders	Diesel	2	300	8	100%	Tier 4 Interim
	Water Trucks	Off-Highway Trucks	Diesel	3	350	8	100%	Tier 4 Interim
	Backhoes	Tractors/Loaders/Backhoes	Diesel	5	120	8	100%	Tier 4 Interim
Grading	Pile Drivers	Excavators	Diesel	10	600	8	100%	Tier 4 Interim
	Forklifts	Forklifts	Diesel	4	150	8	100%	Tier 4 Interim
	Front End Loaders	Rubber Tired Loaders	Diesel	2	300	8	100%	Tier 4 Interim
	Graders	Graders	Diesel	6	250	8	100%	Tier 4 Interim
	Water Trucks	Off-Highway Trucks	Diesel	3	350	8	100%	Tier 4 Interim
	Bulldozers	Rubber Tired Dozers	Diesel	6	300	8	100%	Tier 4 Interim
Building Construction	Cranes	Cranes	Diesel	16	750	8	100%	Tier 4 Interim
	Forklifts	Forklifts	Diesel	4	150	8	100%	Tier 4 Interim
	Backhoes	Tractors/Loaders/Backhoes	Diesel	5	120	8	100%	Tier 4 Interim
	Trenchers	Trenchers	Diesel	4	250	8	100%	Tier 4 Interim
	Water Trucks	Off-Highway Trucks	Diesel	3	350	8	100%	Tier 4 Interim
	Front End Loaders	Rubber Tired Loaders	Diesel	2	300	8	100%	Tier 4 Interim
Paving	Pavers	Pavers	Diesel	2	81	8	100%	Tier 4 Interim
	Paving Equipment	Paving Equipment	Diesel	2	89	8	100%	Tier 4 Interim
	Rollers	Rollers	Diesel	2	36	8	100%	Tier 4 Interim
Architectural Coating	Air Compressors	Air Compressors	Diesel	2	37	6	100%	Tier 4 Interim
Demolition	Skid Steer Loaders	Skid Steer Loaders	Diesel	1	85	5	100%	Tier 4 Interim
	Cranes	Cranes	Diesel	1	335	4	100%	Tier 4 Interim
	Skid Steer Loaders	Skid Steer Loaders	Diesel	1	85	5	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	700	8	100%	Tier 4 Interim
	Concrete/Industrial Saws	Concrete/Industrial Saws	Electric	1	85	5	100%	Average
	Skid Steer Loaders	Skid Steer Loaders	Diesel	2	85	6	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	700	8	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	435	8	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	2	360	8	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	355	8	100%	Tier 4 Interim
	Excavators	Excavators	Diesel	1	290	4	100%	Tier 4 Interim
	Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	225	4	100%	Tier 4 Interim
	Cranes	Cranes	Diesel	1	335	4	100%	Tier 4 Interim

Table 3
Construction Equipment and Usage
Visra BESS
Morro Bay, CA

Notes:

1. Equipment information was provided by the Project Sponsor.
2. CalEEMod equipment types are assigned using CalEEMod Appendix G.
3. All equipment is conservatively assumed to be diesel-fueled.
4. Equipment horsepower is based on information provided by the Project Sponsor. Where no horsepower was provided, CalEEMod Appendix G defaults were used.
5. Controlled equipment engine tiers are conservatively assumed to be Tier 4 Interim.

References:

The California Emissions Estimator Model (CalEEMod). Available at: <http://www.caleemod.com/>

**Table 4
Construction Trips
Vistra BESS
Morro Bay, California**

Construction Area	Construction Activity	Year	Construction Days	Worker Trip Rates ¹ (one-way trips/day)	Vendor Trip Rates ² (one-way trips/day)	Hauling Trips ³ (one-way trips/day)	Trip Lengths ⁴ (miles/one way trip)		
							Worker	Vendor	Hauling
Project Site	Site Preparation	2023	22	100	0	0	10.8	6.9	20
	Grading	2023	44	200	30	0	10.8	6.9	20
		2024	151	200	30	0	10.8	6.9	20
	Building Construction	2024	110	600	40	0	10.8	6.9	20
		2025	262	600	40	0	10.8	6.9	20
		2026	151	600	40	0	10.8	6.9	20
	Paving	2026	20	600	10	0	10.8	6.9	20
	Architcectural Coating	2026	23	600	0	0	10.8	6.9	20
	Demolition	2026	45	134	5	32	10.8	6.9	101
		2027	261	134	5	32	10.8	6.9	101
2028		108	134	5	32	10.8	6.9	101	

EMFAC Data⁵

Trip Type	EMFAC Settings	Fleet Mix	Fuel Type
Worker	San Luis Obispo County Calendar Years 2023-2028 Annual Season Aggregated Model Year EMFAC2007 Vehicle Categories	25% LDA, 50% LDT1, 25% LDT2	Gasoline
Vendor		100% MHDT	Diesel
Hauling		100% HHDT	Diesel

Notes:

1. Worker trip rates are based on the number of expected staff in each phase provided by the Project Sponsor.
2. Vendor trip rates are based on the number of expected daily deliveries in each phase provided by the Project Sponsor.
3. Hauling trips were estimated based on the demolition tonnage provided by the Project Sponsor assuming no import material. Export quantities are converted from tons to corresponding one-way trips per phase by assuming 20 tons per truck. Default truck capacities are consistent with CalEEMod User Guide.
4. Worker, vendor and haul trip lengths are based on CalEEMod Appendix G defaults for San Luis Obispo County.
5. Emissions were calculated using emission factors from EMFAC2021 Emissions Inventory with the specified settings and fleet and fuel assumptions.

Abbreviations:

EMFAC2021 - California Air Resources Board Emission FACTor model
LDA - light-duty automobiles
LDT - light-duty trucks
MHDT - medium heavy-duty trucks
HHDT - heavy heavy-duty trucks
VMT - vehicle miles traveled

References:

The California Emissions Estimator Model (CalEEMod). Available at: <http://www.caleemod.com/>
California Air Resources Board (ARB) 2021. EMFAC2021. Available at: <https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools>

Table 5
CAP and GHG Emissions Comparison to Thresholds
Morro Bay BESS Installation
Morro Bay, California

ROG + NO_x, DPM

Pollutant ¹	Unmitigated Emissions (tons/quarter) ²	Tier 1 Threshold (tons/quarter)	Exceeds Threshold?	Mitigated Emissions (tons/quarter) ³	Tier 2 Threshold (tons/quarter)	Exceeds Threshold?
ROG + NO _x (Combined)	14.97	2.5	<u>Yes</u>	3.45	6.3	<u>No</u>
DPM	0.56	0.13	<u>Yes</u>	0.02	0.32	<u>No</u>

Fugitive Particulate Matter (PM₁₀), Dust

Unmitigated Emissions (tons/quarter) ⁴	Threshold (tons/quarter)	Exceeds Threshold?
0.32	3	<u>No</u>

GHGs

Annual Construction Emissions		
Output (MT CO ₂ e/year)	Threshold ⁵	Exceeds Threshold?
816	1,100	<u>No</u>

Notes:

- Maximum annual emissions of ROG and NO_x were divided by four and summed to obtain a quarterly average for comparison with the applicable SLO County APCD threshold. Because these maximums occurred in different years, the total emissions presented here is a conservative estimate. Maximum annual emissions of Diesel Particulate Matter was also divided by four to obtain a quarterly average for comparison with the applicable SLO County APCD threshold.
- Unmitigated emissions were modeled using off-road construction equipment with an average Tier emissions standards rating.
- Mitigated emissions were modeled using off-road construction equipment with a Tier 4 Interim emissions standards rating.
- Maximum annual emissions of fugitive PM₁₀ were divided by four to obtain a quarterly average for comparison with applicable SLO County APCD threshold.
- Greenhouse gas threshold is based on the Sacramento Metropolitan Air Quality Management District's GHG thresholds, based on conversations with SLO County APCD. In addition to having emissions less than the threshold, the project must implement the following Best Management Practices (BMPs) to be less than significant:

BMP 1 - No natural gas: projects shall be designed and constructed without natural gas infrastructure.

BMP 2 - Electric vehicle (EV) ready: projects shall meet the current CalGreen Tier 2 standards, except all EV capable spaces shall be instead EV ready.

Abbreviations:

CO₂e - Carbon dioxide equivalent
ROG - Reactive organic gases
NO_x - Oxides of nitrogen
GHG - Greenhouse gases

PM₁₀ - Particulate matter <10 microns
SLO County APCD - San Luis Obispo Air Pollution Control District
MT - Metric ton

References:

SLO County APCD. CEQA Air Quality Handbook. Available at: https://storage.googleapis.com/slocleanair-org/images/cms/upload/files/CEQA_Handbook_2012_v2%20%28Updated%20MemoTable1-1_July2021%29_LinkedwithMemo.pdf

APPENDIX B
CALEEMOD® OUTPUTS

Vistra BESS - Tier Mitigated v3 Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Vistra BESS - Tier Mitigated v3
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.20
Precipitation (days)	24.0
Location	35.37488204736745, -120.85921757800375
County	San Luis Obispo
City	Morro Bay
Air District	San Luis Obispo County APCD
Air Basin	South Central Coast
TAZ	3324
EDFZ	6
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Southern California Gas

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Industrial	1.00	User Defined Unit	24.0	273,000	0.00	—	—	Buildings housing battery energy storage system

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.70	278	103	211	0.40	0.78	18.3	19.0	0.78	8.42	9.20	—	48,061	48,061	2.02	1.95	24.4	48,335
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.73	5.63	103	212	0.40	0.78	18.3	19.0	0.78	8.42	9.20	—	47,853	47,853	2.05	1.95	0.68	48,105
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.72	19.6	55.9	118	0.28	0.41	8.99	9.40	0.41	3.83	4.23	—	34,130	34,130	1.35	1.40	7.39	34,314
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.68	3.58	10.2	21.6	0.05	0.07	1.64	1.72	0.07	0.70	0.77	—	5,651	5,651	0.22	0.23	1.22	5,681
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	137	137	—	—	—	—	—	7.00	—	—	—	—	—	—	—	—	—
Unmit.	—	Yes	No	—	—	—	—	—	No	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Threshold	—	137	137	—	—	—	—	—	7.00	—	—	—	—	—	—	—	—
Unmit.	—	No	No	—	—	—	—	—	No	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	3.39	3.36	64.1	131	0.23	0.47	18.2	18.6	0.47	8.28	8.75	—	25,585	25,585	1.05	0.23	3.94	25,685
2024	5.70	5.56	103	211	0.40	0.78	18.3	19.0	0.78	8.42	9.20	—	48,061	48,061	2.02	0.67	24.4	48,335
2025	4.51	4.28	43.2	101	0.40	0.28	4.80	5.08	0.28	1.13	1.42	—	47,952	47,952	2.01	0.67	22.7	48,225
2026	4.40	278	43.0	100.0	0.40	0.28	4.80	5.08	0.28	1.13	1.42	—	47,813	47,813	1.86	0.66	21.0	48,079
2027	2.74	2.18	46.5	73.9	0.19	0.46	11.1	11.6	0.39	2.15	2.54	—	25,165	25,165	1.06	1.95	24.0	25,796
2028	2.63	2.17	45.8	73.5	0.19	0.39	11.1	11.5	0.39	2.15	2.54	—	24,833	24,833	0.99	1.88	21.9	25,439
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	5.73	5.63	103	212	0.38	0.78	18.3	19.0	0.78	8.42	9.20	—	43,164	43,164	1.78	0.50	0.25	43,357
2024	5.65	5.54	103	211	0.40	0.78	18.3	19.0	0.78	8.42	9.20	—	47,853	47,853	2.05	0.67	0.63	48,105
2025	4.50	4.24	43.5	100	0.40	0.28	4.80	5.08	0.28	1.13	1.42	—	47,750	47,750	1.89	0.67	0.59	47,998
2026	4.39	4.14	47.6	98.8	0.40	0.46	11.1	11.6	0.39	2.15	2.54	—	47,615	47,615	1.89	1.95	0.68	47,860
2027	2.74	2.18	46.9	73.7	0.19	0.46	11.1	11.6	0.39	2.15	2.54	—	25,122	25,122	1.07	1.95	0.62	25,731
2028	2.62	2.17	46.2	73.3	0.19	0.39	11.1	11.5	0.39	2.15	2.54	—	24,791	24,791	0.99	1.88	0.57	25,377
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.89	0.87	16.2	33.1	0.06	0.12	3.27	3.39	0.12	1.50	1.62	—	6,694	6,694	0.28	0.07	0.60	6,724
2024	3.72	3.60	55.9	118	0.28	0.41	8.99	9.40	0.41	3.83	4.23	—	32,299	32,299	1.35	0.41	4.79	32,459
2025	3.19	3.01	31.0	71.6	0.28	0.20	3.38	3.58	0.20	0.80	1.00	—	34,130	34,130	1.35	0.48	7.01	34,314

2026	2.46	19.6	24.5	53.3	0.19	0.18	3.86	4.04	0.17	0.85	1.02	—	23,544	23,544	0.93	0.54	6.14	23,734
2027	1.95	1.55	33.6	52.6	0.14	0.33	7.91	8.24	0.28	1.53	1.80	—	17,949	17,949	0.76	1.40	7.39	18,391
2028	0.78	0.64	13.8	21.8	0.06	0.12	3.29	3.41	0.12	0.64	0.75	—	7,376	7,376	0.29	0.56	2.81	7,553
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.16	0.16	2.95	6.04	0.01	0.02	0.60	0.62	0.02	0.27	0.30	—	1,108	1,108	0.05	0.01	0.10	1,113
2024	0.68	0.66	10.2	21.6	0.05	0.07	1.64	1.72	0.07	0.70	0.77	—	5,347	5,347	0.22	0.07	0.79	5,374
2025	0.58	0.55	5.66	13.1	0.05	0.04	0.62	0.65	0.04	0.15	0.18	—	5,651	5,651	0.22	0.08	1.16	5,681
2026	0.45	3.58	4.47	9.72	0.03	0.03	0.70	0.74	0.03	0.16	0.19	—	3,898	3,898	0.15	0.09	1.02	3,930
2027	0.36	0.28	6.12	9.60	0.03	0.06	1.44	1.50	0.05	0.28	0.33	—	2,972	2,972	0.13	0.23	1.22	3,045
2028	0.14	0.12	2.51	3.98	0.01	0.02	0.60	0.62	0.02	0.12	0.14	—	1,221	1,221	0.05	0.09	0.47	1,250

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.23	9.63	0.27	12.3	< 0.005	0.02	0.03	0.05	0.03	0.01	0.03	0.00	1,696	1,696	0.26	0.03	0.28	1,713
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.11	7.68	0.18	0.47	< 0.005	0.01	0.03	0.04	0.01	0.01	0.01	0.00	1,644	1,644	0.25	0.03	0.01	1,661
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.01	9.43	0.26	11.1	< 0.005	0.02	0.02	0.04	0.03	< 0.005	0.03	0.00	1,666	1,666	0.25	0.03	0.08	1,683
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.37	1.72	0.05	2.03	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	0.01	0.00	276	276	0.04	0.01	0.01	279

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	84.6	84.6	< 0.005	< 0.005	0.28	86.1
Area	2.11	9.53	0.10	11.9	< 0.005	0.02	—	0.02	0.02	—	0.02	—	48.8	48.8	< 0.005	< 0.005	—	49.0
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,539	1,539	0.25	0.03	—	1,554
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	2.23	9.63	0.27	12.3	< 0.005	0.02	0.03	0.05	0.03	0.01	0.03	0.00	1,696	1,696	0.26	0.03	0.28	1,713
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	82.0	82.0	< 0.005	< 0.005	0.01	83.4
Area	—	7.58	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,539	1,539	0.25	0.03	—	1,554
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	0.11	7.68	0.18	0.47	< 0.005	0.01	0.03	0.04	0.01	0.01	0.01	0.00	1,644	1,644	0.25	0.03	0.01	1,661
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.04	0.04	0.04	0.25	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	58.9	58.9	< 0.005	< 0.005	0.08	59.9
Area	1.91	9.34	0.09	10.7	< 0.005	0.01	—	0.01	0.02	—	0.02	—	44.1	44.1	< 0.005	< 0.005	—	44.3

Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	1,539	1,539	0.25	0.03	—	1,554
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.2	24.2	< 0.005	< 0.005	—	24.2
Total	2.01	9.43	0.26	11.1	< 0.005	0.02	0.02	0.04	0.03	< 0.005	0.03	0.00	1,666	1,666	0.25	0.03	0.08	1,683
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.01	0.01	0.01	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.75	9.75	< 0.005	< 0.005	0.01	9.92
Area	0.35	1.70	0.02	1.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.31	7.31	< 0.005	< 0.005	—	7.33
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	255	255	0.04	< 0.005	—	257
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Stationary	0.01	0.01	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.00	4.00	< 0.005	< 0.005	—	4.01
Total	0.37	1.72	0.05	2.03	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	0.01	0.00	276	276	0.04	0.01	0.01	279

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,924	12,924	0.52	0.10	—	12,969

Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.18	4.05	8.04	0.01	0.03	—	0.03	0.03	—	0.03	—	1,593	1,593	0.06	0.01	—	1,599
Demolition	—	—	—	—	—	—	0.88	0.88	—	0.13	0.13	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.74	1.47	< 0.005	0.01	—	0.01	0.01	—	0.01	—	264	264	0.01	< 0.005	—	265
Demolition	—	—	—	—	—	—	0.16	0.16	—	0.02	0.02	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.58	0.53	0.43	4.81	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	1,015	1,015	0.03	0.04	0.11	1,029
Vendor	0.01	< 0.005	0.16	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	110	110	< 0.005	0.02	0.01	114
Hauling	0.67	0.16	14.2	4.02	0.07	0.21	0.78	1.00	0.14	0.29	0.43	—	11,363	11,363	0.51	1.79	0.56	11,909
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.59	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	126	126	< 0.005	0.01	0.22	128
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.5	13.5	< 0.005	< 0.005	0.01	14.1

Hauling	0.08	0.02	1.76	0.49	0.01	0.03	0.10	0.12	0.02	0.04	0.05	—	1,401	1,401	0.06	0.22	1.15	1,469
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	20.9	20.9	< 0.005	< 0.005	0.04	21.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.24	2.24	< 0.005	< 0.005	< 0.005	2.34
Hauling	0.02	< 0.005	0.32	0.09	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	232	232	0.01	0.04	0.19	243

3.3. Demolition (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,922	12,922	0.52	0.10	—	12,966
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,922	12,922	0.52	0.10	—	12,966
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	1.07	23.5	46.6	0.09	0.17	—	0.17	0.17	—	0.17	—	9,230	9,230	0.37	0.07	—	9,261

Demolition	—	—	—	—	—	—	5.11	5.11	—	0.77	0.77	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.20	4.28	8.50	0.02	0.03	—	0.03	0.03	—	0.03	—	1,528	1,528	0.06	0.01	—	1,533
Demolition	—	—	—	—	—	—	0.93	0.93	—	0.14	0.14	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.56	0.52	0.35	4.74	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	1,040	1,040	0.02	0.04	3.88	1,057
Vendor	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	107	107	< 0.005	0.02	0.25	112
Hauling	0.67	0.16	13.2	3.87	0.07	0.21	0.78	1.00	0.14	0.29	0.43	—	11,095	11,095	0.51	1.79	19.9	11,661
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.56	0.52	0.40	4.49	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	997	997	0.03	0.04	0.10	1,011
Vendor	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	107	107	< 0.005	0.02	0.01	112
Hauling	0.67	0.16	13.5	3.88	0.07	0.21	0.78	1.00	0.14	0.29	0.43	—	11,096	11,096	0.51	1.79	0.51	11,642
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.40	0.36	0.28	3.19	0.00	0.00	0.05	0.05	0.00	0.00	0.00	—	717	717	0.02	0.03	1.20	728
Vendor	0.01	< 0.005	0.11	0.04	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	76.6	76.6	< 0.005	0.01	0.08	80.1
Hauling	0.48	0.12	9.71	2.76	0.05	0.15	0.56	0.71	0.10	0.20	0.31	—	7,925	7,925	0.36	1.28	6.12	8,321
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.05	0.58	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	119	119	< 0.005	0.01	0.20	121
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.01	13.3

Hauling	0.09	0.02	1.77	0.50	0.01	0.03	0.10	0.13	0.02	0.04	0.06	—	1,312	1,312	0.06	0.21	1.01	1,378
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3.5. Demolition (2028) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,905	12,905	0.52	0.10	—	12,949
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.50	32.8	65.2	0.12	0.24	—	0.24	0.24	—	0.24	—	12,905	12,905	0.52	0.10	—	12,949
Demolition	—	—	—	—	—	—	7.15	7.15	—	1.08	1.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.45	9.77	19.4	0.04	0.07	—	0.07	0.07	—	0.07	—	3,839	3,839	0.16	0.03	—	3,852
Demolition	—	—	—	—	—	—	2.13	2.13	—	0.32	0.32	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.08	1.78	3.54	0.01	0.01	—	0.01	0.01	—	0.01	—	636	636	0.03	0.01	—	638
Demolition	—	—	—	—	—	—	0.39	0.39	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.51	0.31	4.46	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	1,022	1,022	0.02	0.04	3.56	1,039
Vendor	0.01	< 0.005	0.14	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	104	104	< 0.005	0.02	0.22	109
Hauling	0.60	0.16	12.5	3.72	0.07	0.14	0.78	0.93	0.14	0.29	0.43	—	10,800	10,800	0.44	1.72	18.1	11,341
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.50	0.36	4.26	0.00	0.00	0.06	0.06	0.00	0.00	0.00	—	980	980	0.03	0.04	0.09	993
Vendor	0.01	< 0.005	0.15	0.06	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	105	105	< 0.005	0.02	0.01	109
Hauling	0.60	0.16	12.8	3.73	0.07	0.14	0.78	0.93	0.14	0.29	0.43	—	10,801	10,801	0.44	1.72	0.47	11,324
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.15	0.11	1.26	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	293	293	0.01	0.01	0.46	298
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	31.1	31.1	< 0.005	< 0.005	0.03	32.5
Hauling	0.18	0.05	3.85	1.11	0.02	0.04	0.23	0.28	0.04	0.08	0.13	—	3,213	3,213	0.13	0.51	2.33	3,371
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.23	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	48.6	48.6	< 0.005	< 0.005	0.08	49.3
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.14	5.14	< 0.005	< 0.005	< 0.005	5.37
Hauling	0.03	0.01	0.70	0.20	< 0.005	0.01	0.04	0.05	0.01	0.02	0.02	—	532	532	0.02	0.08	0.39	558

3.7. Site Preparation (2023) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.88	2.88	63.7	126	0.23	0.47	—	0.47	0.47	—	0.47	—	24,750	24,750	1.00	0.20	—	24,835
Dust From Material Movement:	—	—	—	—	—	—	17.4	17.4	—	8.10	8.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.88	2.88	63.7	126	0.23	0.47	—	0.47	0.47	—	0.47	—	24,750	24,750	1.00	0.20	—	24,835
Dust From Material Movement:	—	—	—	—	—	—	17.4	17.4	—	8.10	8.10	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.17	3.84	7.59	0.01	0.03	—	0.03	0.03	—	0.03	—	1,492	1,492	0.06	0.01	—	1,497
Dust From Material Movement:	—	—	—	—	—	—	1.05	1.05	—	0.49	0.49	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.70	1.39	< 0.005	0.01	—	0.01	0.01	—	0.01	—	247	247	0.01	< 0.005	—	248	
Dust From Material Movement	—	—	—	—	—	—	0.19	0.19	—	0.09	0.09	—	—	—	—	—	—	—	
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.51	0.47	0.37	4.64	0.00	0.00	0.05	0.05	0.00	0.00	0.00	—	835	835	0.05	0.03	3.94	850	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.51	0.47	0.43	4.41	0.00	0.00	0.05	0.05	0.00	0.00	0.00	—	800	800	0.05	0.03	0.10	811	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.03	0.03	0.02	0.26	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	48.6	48.6	< 0.005	< 0.005	0.10	49.3	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	8.04	8.04	< 0.005	< 0.005	0.02	8.17	
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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3.9. Grading (2023) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.66	4.66	101	202	0.38	0.77	—	0.77	0.77	—	0.77	—	40,873	40,873	1.66	0.33	—	41,013
Dust From Material Movement:	—	—	—	—	—	—	16.6	16.6	—	8.01	8.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.56	0.56	12.1	24.2	0.05	0.09	—	0.09	0.09	—	0.09	—	4,879	4,879	0.20	0.04	—	4,896
Dust From Material Movement:	—	—	—	—	—	—	1.98	1.98	—	0.96	0.96	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.10	2.20	4.41	0.01	0.02	—	0.02	0.02	—	0.02	—	808	808	0.03	0.01	—	811

Dust From Material Movement:	—	—	—	—	—	—	0.36	0.36	—	0.17	0.17	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.01	0.94	0.86	8.82	0.00	0.00	0.10	0.10	0.00	0.00	0.00	—	1,600	1,600	0.10	0.07	0.20	1,622
Vendor	0.06	0.03	1.11	0.46	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	691	691	0.02	0.10	0.05	722
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.10	1.04	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	192	192	0.01	0.01	0.40	195
Vendor	0.01	< 0.005	0.13	0.05	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	82.5	82.5	< 0.005	0.01	0.09	86.2
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.19	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	31.8	31.8	< 0.005	< 0.005	0.07	32.3
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.7	13.7	< 0.005	< 0.005	0.02	14.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Grading (2024) - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.66	4.66	101	202	0.38	0.77	—	0.77	0.77	—	0.77	—	40,802	40,802	1.66	0.33	—	40,942
Dust From Material Movement:	—	—	—	—	—	—	16.6	16.6	—	8.01	8.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.66	4.66	101	202	0.38	0.77	—	0.77	0.77	—	0.77	—	40,802	40,802	1.66	0.33	—	40,942
Dust From Material Movement:	—	—	—	—	—	—	16.6	16.6	—	8.01	8.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.93	1.93	41.9	84.0	0.16	0.32	—	0.32	0.32	—	0.32	—	16,928	16,928	0.69	0.14	—	16,986
Dust From Material Movement:	—	—	—	—	—	—	6.88	6.88	—	3.32	3.32	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	0.35	7.65	15.3	0.03	0.06	—	0.06	0.06	—	0.06	—	2,803	2,803	0.11	0.02	—	2,812

Dust From Material Movement:	—	—	—	—	—	—	1.25	1.25	—	0.61	0.61	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.98	0.87	0.69	8.63	0.00	0.00	0.10	0.10	0.00	0.00	0.00	—	1,641	1,641	0.09	0.07	7.34	1,670
Vendor	0.06	0.03	1.03	0.42	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	681	681	0.02	0.10	1.76	713
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.93	0.86	0.76	8.18	0.00	0.00	0.10	0.10	0.00	0.00	0.00	—	1,572	1,572	0.10	0.07	0.19	1,594
Vendor	0.06	0.03	1.07	0.43	< 0.005	0.01	0.04	0.05	0.01	0.01	0.02	—	681	681	0.02	0.10	0.05	712
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.38	0.35	0.31	3.39	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	657	657	0.04	0.03	1.31	667
Vendor	0.02	0.01	0.44	0.18	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	283	283	0.01	0.04	0.31	296
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.06	0.62	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	109	109	0.01	< 0.005	0.22	110
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	46.8	46.8	< 0.005	0.01	0.05	48.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Building Construction (2024) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,230	42,230	1.71	0.34	—	42,375
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,230	42,230	1.71	0.34	—	42,375
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.52	12.1	23.2	0.12	0.08	—	0.08	0.08	—	0.08	—	12,727	12,727	0.52	0.10	—	12,771
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.10	2.20	4.22	0.02	0.01	—	0.01	0.01	—	0.01	—	2,107	2,107	0.09	0.02	—	2,114
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.95	2.61	2.06	25.9	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,922	4,922	0.27	0.20	22.0	5,010
Vendor	0.08	0.04	1.38	0.56	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	908	908	0.03	0.13	2.35	951
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.80	2.57	2.28	24.5	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,715	4,715	0.30	0.20	0.57	4,781
Vendor	0.07	0.04	1.42	0.58	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	909	909	0.03	0.13	0.06	949
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.83	0.77	0.68	7.38	0.00	0.00	0.09	0.09	0.00	0.00	0.00	—	1,431	1,431	0.09	0.06	2.86	1,454
Vendor	0.02	0.01	0.43	0.17	< 0.005	< 0.005	0.01	0.02	< 0.005	0.01	0.01	—	274	274	0.01	0.04	0.30	286
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.14	0.12	1.35	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	237	237	0.01	0.01	0.47	241
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	45.3	45.3	< 0.005	0.01	0.05	47.4
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Building Construction (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,229	42,229	1.71	0.34	—	42,374
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,229	42,229	1.71	0.34	—	42,374
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.24	1.24	28.6	54.9	0.28	0.19	—	0.19	0.19	—	0.19	—	30,163	30,163	1.22	0.24	—	30,267
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.23	5.22	10.0	0.05	0.04	—	0.04	0.04	—	0.04	—	4,994	4,994	0.20	0.04	—	5,011	
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—	
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	2.70	2.51	1.89	24.1	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,831	4,831	0.26	0.20	20.4	4,916	
Vendor	0.07	0.04	1.31	0.53	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	892	892	0.03	0.13	2.34	935	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	2.69	2.47	2.11	22.9	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,628	4,628	0.15	0.20	0.53	4,690	
Vendor	0.07	0.04	1.35	0.54	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	893	893	0.03	0.13	0.06	933	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	1.89	1.74	1.49	16.4	0.00	0.00	0.20	0.20	0.00	0.00	0.00	—	3,329	3,329	0.10	0.14	6.29	3,380	
Vendor	0.05	0.03	0.96	0.38	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	638	638	0.02	0.10	0.72	667	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.35	0.32	0.27	2.99	0.00	0.00	0.04	0.04	0.00	0.00	0.00	—	551	551	0.02	0.02	1.04	560	
Vendor	0.01	< 0.005	0.18	0.07	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	106	106	< 0.005	0.02	0.12	110	

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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3.17. Building Construction (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e	
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,193	42,193	1.71	0.34	—	42,338	
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.74	1.74	40.0	76.8	0.39	0.27	—	0.27	0.27	—	0.27	—	42,193	42,193	1.71	0.34	—	42,338	
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	0.72	16.6	31.9	0.16	0.11	—	0.11	0.11	—	0.11	—	17,505	17,505	0.71	0.14	—	17,565	

Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.13	3.03	5.82	0.03	0.02	—	0.02	0.02	—	0.02	—	2,898	2,898	0.12	0.02	—	2,908
Dust From Material Movement:	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.60	2.40	1.73	22.7	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,744	4,744	0.12	0.20	18.9	4,824
Vendor	0.06	0.03	1.25	0.50	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	876	876	0.03	0.13	2.18	917
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.58	2.38	1.94	21.5	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,545	4,545	0.15	0.20	0.49	4,607
Vendor	0.06	0.03	1.28	0.51	0.01	0.01	0.05	0.06	0.01	0.02	0.03	—	876	876	0.03	0.13	0.06	915
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.06	0.98	0.79	8.87	0.00	0.00	0.12	0.12	0.00	0.00	0.00	—	1,899	1,899	0.05	0.08	3.38	1,928
Vendor	0.03	0.01	0.53	0.21	< 0.005	0.01	0.02	0.03	0.01	0.01	0.01	—	364	364	0.01	0.05	0.39	380
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.18	0.15	1.62	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	314	314	0.01	0.01	0.56	319
Vendor	< 0.005	< 0.005	0.10	0.04	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	60.2	60.2	< 0.005	0.01	0.06	62.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.19. Paving (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.23	7.21	10.6	0.01	0.09	—	0.09	0.08	—	0.08	—	1,511	1,511	0.06	0.01	—	1,516
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.39	0.58	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.07	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.60	2.40	1.73	22.7	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,744	4,744	0.12	0.20	18.9	4,824	
Vendor	0.02	0.01	0.31	0.13	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	219	219	0.01	0.03	0.54	229	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.14	0.13	0.10	1.17	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	251	251	0.01	0.01	0.45	255	
Vendor	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.0	12.0	< 0.005	< 0.005	0.01	12.5	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Worker	0.03	0.02	0.02	0.21	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	41.5	41.5	< 0.005	< 0.005	0.07	42.2	
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.99	1.99	< 0.005	< 0.005	< 0.005	2.08	
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00	

3.21. Architectural Coating (2026) - Unmitigated

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

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

Off-Road Equipment	0.02	0.02	1.07	0.96	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	—	275	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.07	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.41	8.41	< 0.005	< 0.005	—	8.44
Architectural Coatings	—	17.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.39	1.39	< 0.005	< 0.005	—	1.40
Architectural Coatings	—	3.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.60	2.40	1.73	22.7	0.00	0.00	0.29	0.29	0.00	0.00	0.00	—	4,744	4,744	0.12	0.20	18.9	4,824
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.12	1.35	0.00	0.00	0.02	0.02	0.00	0.00	0.00	—	288	288	0.01	0.01	0.51	293
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.25	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	47.8	47.8	< 0.005	< 0.005	0.09	48.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	84.6	84.6	< 0.005	< 0.005	0.28	86.1
Total	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	84.6	84.6	< 0.005	< 0.005	0.28	86.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Industrial	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	82.0	82.0	< 0.005	< 0.005	0.01	83.4
Total	0.06	0.06	0.05	0.35	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	82.0	82.0	< 0.005	< 0.005	0.01	83.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.01	0.01	0.01	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.75	9.75	< 0.005	< 0.005	0.01	9.92
Total	0.01	0.01	0.01	0.05	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.75	9.75	< 0.005	< 0.005	0.01	9.92

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,539	1,539	0.25	0.03	—	1,554
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	—	255	255	0.04	< 0.005	—	257
Total	—	—	—	—	—	—	—	—	—	—	—	—	255	255	0.04	< 0.005	—	257

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.2. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	5.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.73	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	2.11	1.95	0.10	11.9	< 0.005	0.02	—	0.02	0.02	—	0.02	—	48.8	48.8	< 0.005	< 0.005	—	49.0
Total	2.11	9.53	0.10	11.9	< 0.005	0.02	—	0.02	0.02	—	0.02	—	48.8	48.8	< 0.005	< 0.005	—	49.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	5.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.73	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	7.58	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	1.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipme	0.35	0.32	0.02	1.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.31	7.31	< 0.005	< 0.005	—	7.33
Total	0.35	1.70	0.02	1.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.31	7.31	< 0.005	< 0.005	—	7.33

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
User Defined Industrial	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
----------	-----	-----	-----	----	-----	-------	-------	-------	--------	--------	--------	------	-------	------	-----	-----	---	------

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fire Pump	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fire Pump	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Total	0.05	0.05	0.13	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.5	23.5	< 0.005	< 0.005	—	23.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fire Pump	0.01	0.01	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.00	4.00	< 0.005	< 0.005	—	4.01
Total	0.01	0.01	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.00	4.00	< 0.005	< 0.005	—	4.01

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequest ered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Remove d	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	10/30/2026	5/31/2028	5.00	414	—
Site Preparation	Site Preparation	9/30/2023	10/31/2023	5.00	22.0	—
Grading	Grading	11/1/2023	7/30/2024	5.00	195	—
Building Construction	Building Construction	7/31/2024	7/31/2026	5.00	523	—
Paving	Paving	8/1/2026	8/28/2026	5.00	20.0	—
Architectural Coating	Architectural Coating	8/29/2026	9/30/2026	5.00	23.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Skid Steer Loaders	Diesel	Tier 4 Interim	1.00	5.00	85.0	0.37
Demolition	Cranes	Diesel	Tier 4 Interim	1.00	4.00	335	0.29
Demolition	Skid Steer Loaders	Diesel	Tier 4 Interim	1.00	5.00	85.0	0.37
Site Preparation	Scrapers	Diesel	Tier 4 Interim	2.00	8.00	500	0.48
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Interim	6.00	8.00	300	0.40
Grading	Excavators	Diesel	Tier 4 Interim	10.0	8.00	600	0.38
Grading	Forklifts	Diesel	Tier 4 Interim	4.00	8.00	150	0.20
Grading	Rubber Tired Loaders	Diesel	Tier 4 Interim	2.00	8.00	300	0.40
Grading	Graders	Diesel	Tier 4 Interim	6.00	8.00	250	0.41
Grading	Off-Highway Trucks	Diesel	Tier 4 Interim	3.00	8.00	350	0.37
Building Construction	Cranes	Diesel	Tier 4 Interim	16.0	8.00	750	0.29
Building Construction	Forklifts	Diesel	Tier 4 Interim	4.00	8.00	150	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	5.00	8.00	120	0.37
Building Construction	Trenchers	Diesel	Tier 4 Interim	4.00	8.00	250	0.50
Building Construction	Off-Highway Trucks	Diesel	Tier 4 Interim	3.00	8.00	350	0.45
Paving	Pavers	Diesel	Tier 4 Interim	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Interim	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Interim	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Interim	1.00	6.00	37.0	0.48
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	700	0.38
Demolition	Concrete/Industrial Saws	Electric	Average	1.00	5.00	85.0	0.73
Demolition	Skid Steer Loaders	Diesel	Tier 4 Interim	2.00	6.00	85.0	0.37

Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	700	0.38
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	435	0.38
Demolition	Excavators	Diesel	Tier 4 Interim	2.00	8.00	360	0.38
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	8.00	355	0.38
Demolition	Excavators	Diesel	Tier 4 Interim	1.00	4.00	290	0.38
Demolition	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	1.00	4.00	225	0.37
Demolition	Cranes	Diesel	Tier 4 Interim	1.00	4.00	335	0.29
Site Preparation	Graders	Diesel	Tier 4 Interim	6.00	8.00	250	0.41
Site Preparation	Rubber Tired Loaders	Diesel	Tier 4 Interim	2.00	8.00	300	0.36
Site Preparation	Off-Highway Trucks	Diesel	Tier 4 Interim	3.00	8.00	350	0.38
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Interim	5.00	8.00	120	0.37
Grading	Rubber Tired Dozers	Diesel	Tier 4 Interim	6.00	8.00	300	0.40
Building Construction	Rubber Tired Loaders	Diesel	Tier 4 Interim	2.00	8.00	300	0.36

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	134	10.8	LDA,LDT1,LDT2
Demolition	Vendor	5.00	6.85	HHDT,MHDT
Demolition	Hauling	32.0	101	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	100	10.8	LDA,LDT1,LDT2
Site Preparation	Vendor	0.00	6.85	HHDT,MHDT

Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	0.00	—	HHDT
Grading	—	—	—	—
Grading	Worker	200	10.8	LDA,LDT1,LDT2
Grading	Vendor	30.0	6.85	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	0.00	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	600	10.8	LDA,LDT1,LDT2
Building Construction	Vendor	40.0	6.85	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	0.00	—	HHDT
Paving	—	—	—	—
Paving	Worker	600	10.8	LDA,LDT1,LDT2
Paving	Vendor	10.0	6.85	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	600	10.8	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	6.85	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	409,500	136,500	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	134,000	—
Site Preparation	—	—	176	0.00	—
Grading	—	—	1,170	0.00	—
Building Construction	—	—	24.0	0.00	—
Paving	0.00	0.00	0.00	0.00	5.00

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
User Defined Industrial	5.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	204	0.03	< 0.005
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	231	204	0.03	< 0.005
2027	231	204	0.03	< 0.005
2028	231	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
User Defined Industrial	13.0	0.00	0.00	3,389	105	0.00	0.00	27,266

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	409,500	136,500	—

5.10.3. Landscape Equipment

Season	Unit	Value
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Snow Days	day/yr	0.00
Summer Days	day/yr	330

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
User Defined Industrial	2,753,533	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
User Defined Industrial	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
User Defined Industrial	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
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5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
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5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Fire Pump	Diesel	1.00	0.08	30.0	350	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
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5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres
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5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
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5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
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6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	8.70	annual days of extreme heat
Extreme Precipitation	4.45	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	36.3	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	13.6
AQ-PM	8.43
AQ-DPM	16.6
Drinking Water	44.2
Lead Risk Housing	54.6
Pesticides	61.6
Toxic Releases	11.4
Traffic	40.3
Effect Indicators	—
CleanUp Sites	78.0
Groundwater	35.0
Haz Waste Facilities/Generators	78.4
Impaired Water Bodies	83.0
Solid Waste	59.2
Sensitive Population	—
Asthma	40.0
Cardio-vascular	25.3

Low Birth Weights	98.9
Socioeconomic Factor Indicators	—
Education	26.4
Housing	17.4
Linguistic	—
Poverty	52.1
Unemployment	—

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	—
Employed	—
Median HI	—
Education	—
Bachelor's or higher	—
High school enrollment	—
Preschool enrollment	—
Transportation	—
Auto Access	—
Active commuting	—
Social	—
2-parent households	—
Voting	—
Neighborhood	—
Alcohol availability	—

Park access	—
Retail density	—
Supermarket access	—
Tree canopy	—
Housing	—
Homeownership	—
Housing habitability	—
Low-inc homeowner severe housing cost burden	—
Low-inc renter severe housing cost burden	—
Uncrowded housing	—
Health Outcomes	—
Insured adults	—
Arthritis	0.0
Asthma ER Admissions	75.3
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	0.0
Cognitively Disabled	9.6
Physically Disabled	23.7
Heart Attack ER Admissions	73.1
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0

Pedestrian Injuries	0.0
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	65.9
Children	94.5
Elderly	6.6
English Speaking	0.0
Foreign-born	0.0
Outdoor Workers	87.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	54.0
Traffic Density	0.0
Traffic Access	0.0
Other Indices	—
Hardship	0.0
Other Decision Support	—
2016 Voting	0.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	46.0

Healthy Places Index Score for Project Location (b)	—
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Land use changed to reflect information provided by project sponsor.
Construction: Construction Phases	All phases - updated duration to match information provided by project sponsor
Construction: Off-Road Equipment	All phases - updated construction equipment list to match information provided by project sponsor
Operations: Vehicle Data	Weekday trip rate - adjusted to reflect information provided by project sponsor
Operations: Energy Use	Energy use - used electricity intensity defaults for General Light Industry in EDFZ 6 (Central Coast). The buildings housing the batteries are not expected to use any natural gas, as there will be no refrigeration or heating capacity.
Construction: Trips and VMT	Updated trip numbers and trip length to match information provided by the project sponsor.
Construction: Dust From Material Movement	In the data request, water trucks are associated with building construction and are added here to reflect that. Total acres graded for Building Construction was set to 24 to reflect the project acreage
Construction: Paving	Update paved area acreage to reflect information provided by the project sponsor.