



B.P. Fueling & Mini-Storage Project

Air Quality and Greenhouse Gas Emissions Report

prepared for

A & S Engineering, Inc.

28405 Sand Canyon Road, Suite B

Canyon Country, California 91387

Contact: Ahmad Ghaderi

prepared by

Rincon Consultants, Inc.

2215 Faraday Avenue, Suite A

Carlsbad, California 92008

April 2024



RINCON CONSULTANTS, INC.

Environmental Scientists | Planners | Engineers

rinconconsultants.com

Table of Contents

1	Project Description	1
1.1	Introduction	1
1.2	Project Summary.....	1
2	Background	6
2.1	Local Climate and Meteorology	6
2.2	Air Pollutants of Primary Concern.....	6
2.3	Air Quality Regulation	9
2.4	Current Air Quality	14
3	Air Quality Impact Analysis	16
3.1	Methodology.....	16
3.2	Significance Thresholds.....	16
3.3	Project-level Impact Analysis	18
4	Greenhouse Gas Emissions.....	23
4.1	Climate Change and Greenhouse Gases	23
4.2	Greenhouse Gas Emissions Inventory.....	24
4.3	Potential Effects of Climate Change.....	24
4.4	Regulatory and Legal Setting	27
5	Greenhouse Gas Impact Analysis	33
5.1	Methodology.....	33
5.2	Significance Thresholds.....	33
5.3	Project-level Impact Analysis	35
6	References	38

Tables

Table 1	Summary of Impacts	1
Table 2	Federal and State Ambient Air Quality Standards	11
Table 3	Ambient Air Quality at the Nearest Monitoring Station	14
Table 4	SMAQMD Air Quality Significance Thresholds.....	17
Table 5	Construction Criteria Pollutant Emissions	18
Table 6	Operational Criteria Pollutant Emissions	20
Table 7	SMAQMD GHG Thresholds	34
Table 8	Estimated Construction GHG Emissions	35
Table 9	Operational Emissions	36

Figures

Figure 1 Regional Location 2

Figure 2 Project Site 3

Figure 3 Project Site Plan 5

Appendices

Appendix A Model Outputs

1 Project Description

1.1 Introduction

This study analyzes the potential air quality and greenhouse gas (GHG) impacts of the proposed B.P. Fueling & Mini-Storage Project (project) located in the unincorporated community of Orangevale in Sacramento County, California. Rincon Consultants, Inc. (Rincon) prepared this study for A & S Engineering, Inc. (applicant) for use in support of environmental documentation pursuant to the California Environmental Quality Act (CEQA). The purpose of this study is to analyze the project's air quality and GHG impacts related to both temporary construction activity and long-term operation of the project. The conclusions of this study are summarized in Table 1.

Table 1 Summary of Impacts

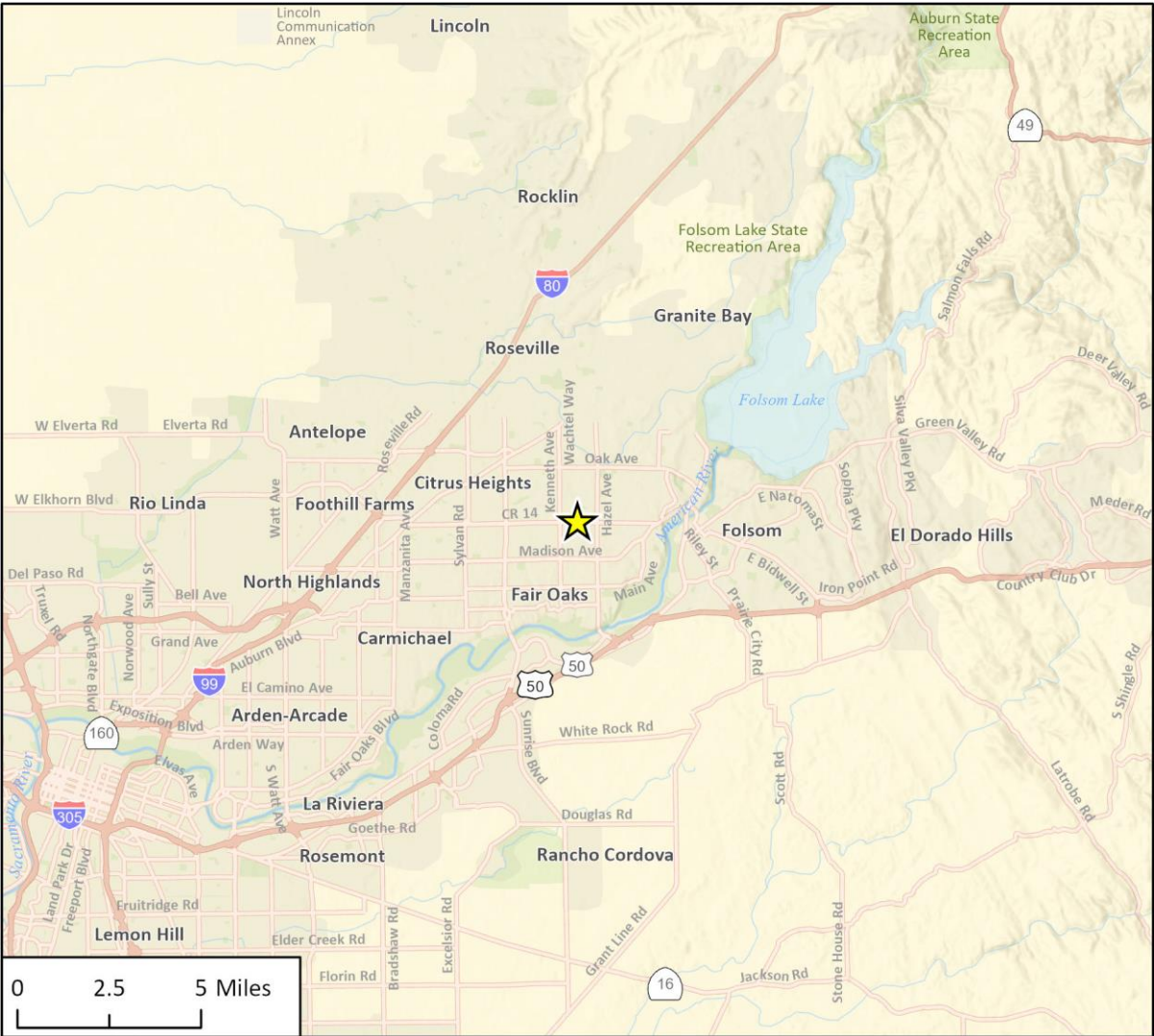
Impact Statement	Proposed Project's Level of Significance	Applicable Recommendations
Air Quality		
Would the project conflict with or obstruct implementation of the applicable air quality plan?	Less than significant impact	None
Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?	Less than significant impact	None
Would the project expose sensitive receptors to substantial pollutant concentrations?	Less than significant impact with mitigation	AQ-1: Gas Station Health Risk Assessment
Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Less than significant impact	None
Greenhouse Gas Emissions		
Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less than significant impact	None
Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less than significant impact	None

1.2 Project Summary

Project Location

The 2.84-acre project site is located in the unincorporated community of Orangevale in Sacramento County, California. The project site lies at 8695 Greenback Lane at the northwest corner of Greenback Lane and Hickory Avenue. The site is currently undeveloped and graded. A single-family house is located to the north, and an assisted living facility is located to the west. Across Hickory Avenue to the east is a WinCo Foods, and across Greenback Lane to the south is a convenience store and gas station. Figure 1 shows the project site's regional location and Figure 2 shows an aerial view of the project site and surrounding area.

Figure 1 Regional Location



Imagery provided by Esri and its licensors © 2024.

★ Project Location



24-15940 EPS

Fig 1 Regional Location

Figure 2 Project Site



Imagery provided by Microsoft Bing and its licensors © 2024.

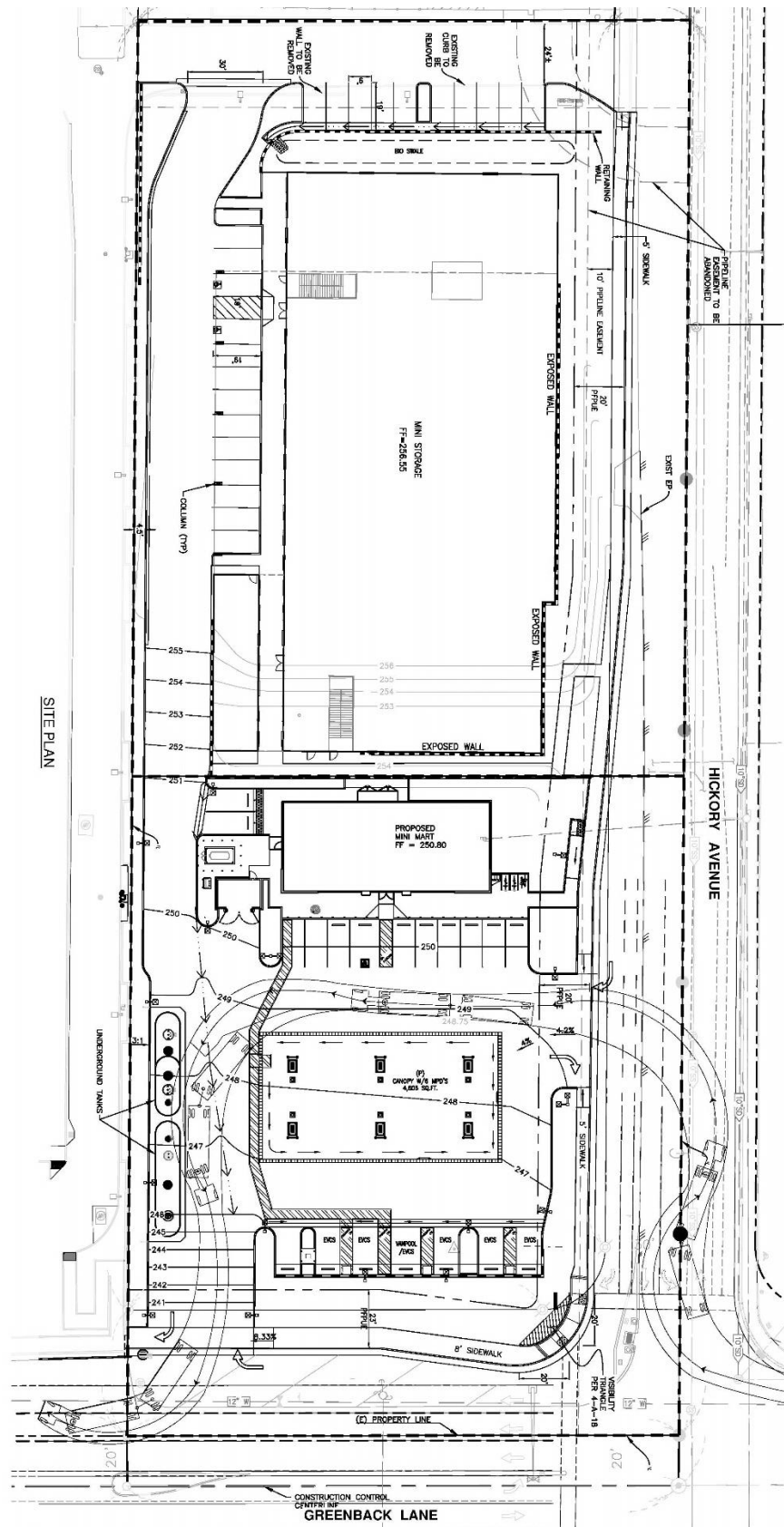
24-15940.EPS
Fig 2 Project Location

Project Description

The project would involve the construction of a 2,900-square foot convenience store with six fuel stations and an 80,197 square-foot, three-story mini-storage facility. One story of the mini-storage facility would be subterranean with two above ground floors. The fueling station would be covered by a 4,606 square foot canopy. The project would provide a total of 39 parking spaces in a surface lot, six of which would have electric vehicle (EV) charging capability (three Level 3 charging machines with the ability to charge two cars each). One of the EV charger spots would also be a vanpool spot. Additional improvements include curb and sidewalk enhancements and landscaping. The project would not use natural gas. Access to the project site would be provided from driveways off Hickory Avenue and Greenback Lane. Figure 3 shows the project site plan.

Project construction is estimated to begin in 2025. Construction activities would include site preparation, grading, building construction, paving, and architectural coating (i.e., painting). Cut and fill on site is assumed to be balanced with no soil import or export during site preparation or grading, as the site has been previously graded.

Figure 3 Project Site Plan



2 Background

2.1 Local Climate and Meteorology

The project is located within the Sacramento Valley Air Basin (SVAB), which includes Butte, Colusa, Glenn, Shasta, Sutter, Tehama, Yolo, Yuba, portions of Placer and Solano counties, as well as Sacramento County. The SVAB is bounded by the North Coast Ranges on the west and the Northern Sierra Nevada Mountains on the east. The intervening terrain is flat. Air quality in this area is determined by such natural factors as topography, meteorology, and climate, in addition to the presence of existing air pollution sources and ambient conditions. The mountains surrounding SVAB create a barrier to airflow, which can create inversion layers, trapping air pollutants in the Sacramento Valley. Inversion layers are formed when temperature increases with elevation above ground, or when a mass of warm dry air settles over a mass of cooler air near the ground.

The SVAB has a Mediterranean climate, characterized by hot dry summers and mild rainy winters. The annual average temperature in SVAB ranges from 20 to 115 degrees Fahrenheit with summer highs around 90 degrees Fahrenheit and winter lows occasionally below freezing. The average annual rainfall in SVAB is about 20 inches in the winter and spring with snowfall being rare. The predominant wind direction in the vicinity of project site is from the southeast and the average wind speed is approximately six miles per hour (Iowa Environmental Mesonet 2023).

Air pollutant emissions in the SVAB are generated primarily by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat. Area sources are widely distributed and include such sources as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and some consumer products. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment. Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles.

2.2 Air Pollutants of Primary Concern

Primary criteria pollutants are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere. Primary criteria pollutants include carbon monoxide (CO), nitrogen dioxide (NO₂), fine particulate matter (PM₁₀ and PM_{2.5}), sulfur dioxide (SO₂), and lead. Ozone (O₃) is considered a secondary criteria pollutant because it is created by atmospheric chemical and photochemical reactions between reactive organic gases (ROG) and nitrogen oxides (NO_x). The project would generate CO, PM₁₀, PM_{2.5}, SO₂, and lead as well as ozone precursors ROG and NO_x (including NO₂) during construction and operation. These pollutants can have adverse impacts on human health at certain levels of exposure. The following subsections describe the characteristics, sources, and health and atmospheric effects of air pollutants.

Ozone

Ozone is produced by a photochemical reaction (triggered by sunlight) between nitrogen oxides (NO_x) and volatile organic compounds (VOC^1). NO_x is formed during the combustion of fuels, while ROG are formed during combustion and evaporation of organic solvents. Because O_3 requires sunlight to form, it usually occurs in substantial concentrations between the months of April and October. Ozone is a pungent, colorless, toxic gas with direct health effects on humans including respiratory and eye irritation and possible changes in lung functions (United States Environmental Protection Agency [USEPA] 2020a). Groups most sensitive to O_3 include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors.

Carbon Monoxide

Carbon monoxide is a local pollutant that is found in high concentrations near fuel combustion equipment and other sources of CO. The primary source of CO, a colorless, odorless, poisonous gas, is automobile traffic. Therefore, elevated concentrations are usually only found near areas of high traffic volumes. The health effects of CO are related to its affinity for hemoglobin in the blood. At high concentrations, CO reduces the amount of oxygen in the blood, causing heart difficulty in people with chronic diseases, nausea, reduced lung capacity, and impaired mental abilities (U.S. 2020).

Nitrogen Dioxide

Nitrogen dioxide is a byproduct of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts rapidly to form NO_2 , creating the mixture of NO and NO_2 commonly called NO_x . NO_2 is an acute irritant. A relationship between NO_2 and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 parts per million (ppm) may occur. Elevated levels of NO_2 can also cause respiratory irritation, impaired pulmonary function, and bronchitis (USEPA 2020a). Nitrogen dioxide absorbs blue light, gives a reddish-brown cast to the atmosphere, and reduces visibility. It can also contribute to the formation of ozone/smog and acid rain.

Sulfur Dioxide

SO_2 is a colorless, pungent, irritating gas formed primarily by the combustion of sulfur-containing fossil fuels. When SO_2 oxidizes in the atmosphere, it forms sulfur trioxide (SO_3). Collectively, these pollutants are referred to as sulfur oxides (SO_x). In humid atmospheres, SO_2 can also form sulfuric acid mist, which can eventually react to produce sulfate particulates that can inhibit visibility. Combustion of high sulfur-content fuels is the major source, while chemical plants, sulfur recovery plants, and metal processing are minor contributors. At sufficiently high concentrations, SO_2 irritates the upper respiratory tract. At lower concentrations, when in conjunction with particulates, SO_2 appears to do still greater harm by injuring lung tissues. This compound also constricts the breathing passages, especially in people with asthma and people involved in moderate to heavy exercise.

¹ Organic compound precursors of ozone are routinely described by a number of variations of three terms: hydrocarbons (HC), organic gases (OG), and organic compounds (OC). These terms are often modified by adjectives such as total, reactive, or volatile, and result in a rather confusing array of acronyms: HC, THC (total hydrocarbons), RHC (reactive hydrocarbons), TOG (total organic gases), ROG (reactive organic gases), TOC (total organic compounds), ROC (reactive organic compounds), and VOC (volatile organic compounds). While most of these differ in some significant way from a chemical perspective, two groups are important from an air quality perspective: non-photochemically reactive in the lower atmosphere, or photochemically reactive in the lower atmosphere (HC, RHC, ROG, ROC, and VOC). MDAQMD uses the term VOC to denote organic precursors.

Sulfur dioxide causes respiratory irritation, including wheezing, shortness of breath, and coughing (USEPA 2020a). Long-term SO₂ exposure has been associated with increased risk of mortality from respiratory or cardiovascular disease. Sulfur oxides, in combination with moisture and oxygen, can yellow leaves on plants, dissolve marble, and eat away iron and steel.

Particulate Matter

Atmospheric particulate matter is comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. The particulates that are of particular concern are PM₁₀ (small particulate matter that measures no more than 10 microns in diameter) and PM_{2.5} (fine particulate that measures no more than 2.5 microns in diameter). The characteristics, sources, and potential health effects associated with the PM₁₀ and PM_{2.5} can be different. Major man-made sources of PM₁₀ are agricultural operations, industrial processes, combustion of fossil fuels, construction, demolition operations, and entrainment of road dust into the atmosphere. Natural sources include windblown dust, wildfire smoke, and sea spray salt. The finer PM_{2.5} particulates are generally associated with combustion processes as well as formation in the atmosphere as a secondary pollutant through chemical reactions. Elevated levels of PM₁₀ can cause respiratory irritation, reduced lung function, aggravation of cardiovascular disease, and cancer (USEPA 2020a). PM_{2.5} is more likely to penetrate deeply into the lungs and poses a serious health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. Elevated levels of PM_{2.5} can cause respiratory stress and decreased lung function and increase the risk of long-term disease (USEPA 2020a). More than half of the small and fine particulate matter that is inhaled into the lungs remains there, which can cause permanent lung damage. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance.

Lead

Lead (Pb) is a metal found naturally in the environment, as well as in manufacturing products. Lead occurs in the atmosphere as particulate matter. The major sources of Pb emissions historically have been mobile and industrial sources. In the early 1970s, the USEPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The USEPA completed the ban prohibiting the use of leaded gasoline in highway vehicles in December 1995. As a result of the USEPA's regulatory efforts to remove lead from gasoline, atmospheric lead concentrations have declined substantially over the past several decades. The most dramatic reductions in lead emissions occurred prior to 1990 due to the removal of lead from gasoline sold for most highway vehicles. Lead emissions were further reduced substantially between 1990 and 2008, with reductions occurring in the metals industries in part due to national emissions standards for hazardous air pollutants (USEPA 2013). As a result of phasing out leaded gasoline, metal processing is currently the primary source of Pb emissions. The highest level of Pb in the air is generally found near lead smelters. Other stationary sources include waste incinerators, utilities, and lead-acid battery manufacturers. Lead may cause a range of health effects, including anemia, kidney disease, and neuromuscular and neurological dysfunction (in severe cases). Demolition of buildings containing lead-based paint is regulated by existing laws and regulations, including California Code of Regulations (CCR) Title 17, Division 1, Chapter 8, and Senate Bill 460, to reduce or eliminate the risk to nearby receptors. Furthermore, the proposed project does not include any stationary sources of lead emissions. Therefore, implementation of the project would not result in substantial emissions of lead, and this pollutant is not discussed further in this analysis.

Toxic Air Contaminants

A toxic air contaminant (TAC) is an air pollutant that may cause or contribute to an increase in mortality or serious illness or which may pose a present or potential hazard to human health. TACs may result in long-term health effects such as cancer, birth defects, neurological damage, asthma, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation, runny nose, throat pain, and headaches. TACs are considered either carcinogenic or non-carcinogenic based on the nature of the health effects associated with exposure. For carcinogenic TACs, potential health impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Non-carcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

TACs include both organic and inorganic chemical substances. One of the main sources of TACs in California is diesel engines that emit exhaust containing solid material known as diesel particulate matter; however, TACs may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. TACs commonly associated with gasoline dispensing stations include the organic compounds of benzene, toluene, and xylene. In particular, benzene is a known human carcinogen and can result in short-term acute and long-term chronic health impacts (USEPA n.d.). Between 1990 and 2005, benzene in California's air was reduced by over 75 percent due to implementation of control technologies, such as vapor recovery systems, and reductions of benzene levels in gasoline (California Air Resources Board [CARB] 2005). Today, gasoline dispensing facilities account for a relatively small fraction of total benzene emissions. However, near source exposure resulting from gasoline dispensing facilities, particularly very high throughput retail or wholesale facilities, can result in elevated health risks to nearby sensitive receptors.

2.3 Air Quality Regulation

The federal and state governments have authority under the federal and state Clean Air Act (CAA) to regulate emissions of airborne pollutants and have established ambient air quality standards (AAQS) for the protection of public health. An air quality standard is defined as “the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without harming public health” (CARB 2023a). The U.S. EPA is the federal agency designated to administer air quality regulation, while CARB is the state equivalent in California. Federal and state AAQS have been established for six criteria pollutants: O₃, CO, NO₂, SO₂, PM₁₀, PM_{2.5}, and Pb. AAQS are designed to protect those segments of the public most susceptible to respiratory distress, such as children under the age of 14, the elderly (over the age of 65), persons engaged in strenuous work or exercise, and people with cardiovascular and chronic respiratory diseases (U.S. EPA 2016). In addition, the State of California has established health-based ambient air quality standards for these and other pollutants, some of which are more stringent than the federal standards (CARB 2023b). The federal and state Clean Air Acts are described in more detail below.

Federal Air Quality Regulations

The federal CAA was enacted in 1970 and amended in 1977 and 1990 (42 United States Code [USC] 7401) for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare, and productivity. In 1971, to achieve the purposes of Section 109 of the CAA (42 USC 7409), the U.S. EPA developed primary and secondary National Ambient Air Quality Standards (NAAQS). NAAQS have been designated for the following criteria pollutants: ozone, CO, NO₂, SO₂, PM₁₀, PM_{2.5}, and lead.

The primary NAAQS "in the judgment of the Administrator², based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health," and the secondary standards are to "protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air" (42 USC 7409[b][2]). The U.S. EPA classifies specific geographic areas as either "attainment" or "nonattainment" areas for each pollutant based on the comparison of measured data with the NAAQS. States are required to adopt an enforceable plan, known as a State Implementation Plan (SIP), to achieve and maintain air quality meeting the NAAQS. State plans also must control emissions that drift across state lines and adversely affect air quality in downwind states. Once a nonattainment area has achieved the air quality standards for a particular pollutant, it may be redesignated to an attainment area for that pollutant. To be redesignated, the area must meet air quality standards and have a 10-year plan for continuing to meet and maintain air quality standards, as well as satisfy other requirements of the federal CAA. Areas that have been redesignated to attainment are called maintenance areas. Table 2 lists the current federal standards for regulated pollutants.

² The term "Administrator" means the Administrator of the U.S. EPA.

Table 2 Federal and State Ambient Air Quality Standards

Pollutant	NAAQS	CAAQS
Ozone	0.070 ppm (8-hr avg)	0.09 ppm (1-hr avg) 0.070 ppm (8-hr avg)
Carbon Monoxide	35.0 ppm (1-hr avg) 9.0 ppm (8-hr avg)	20.0 ppm (1-hr avg) 9.0 ppm (8-hr avg)
Nitrogen Dioxide	0.100 ppm (1-hr avg) 0.053 ppm (annual avg)	0.18 ppm (1-hr avg) 0.030 ppm (annual avg)
Sulfur Dioxide	0.075 ppm (1-hr avg) 0.5 ppm (3-hr avg) 0.14 ppm (24-hr avg) 0.030 ppm (annual avg)	0.25 ppm (1-hr avg) 0.04 ppm (24-hr avg)
Lead	0.15 µg/m ³ (rolling 3-month avg) 1.5 µg/m ³ (calendar quarter)	1.5 µg/m ³ (30-day avg)
Particulate Matter (PM ₁₀)	150 µg/m ³ (24-hr avg)	50 µg/m ³ (24-hr avg) 20 µg/m ³ (annual avg)
Particulate Matter (PM _{2.5})	35 µg/m ³ (24-hr avg) 12 µg/m ³ (annual avg)	12 µg/m ³ (annual avg)
Visibility-Reducing Particles	No Federal Standards	Extinction coefficient of 0.23 per kilometer – visibility of ten miles or more (0.07 - 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape. (8-hr avg)
Sulfates	No Federal Standards	25 µg/m ³ (24-hr avg)
Hydrogen Sulfide	No Federal Standards	0.03 ppm (1-hr avg)
Vinyl Chloride	No Federal Standards	0.01 ppm (24-hr avg)

NAAQS = National Ambient Air Quality Standards; CAAQS = California Ambient Air Quality Standards; ppm = parts per million; avg = average; µg/m³ = micrograms per cubic meter

Source: CARB 2016

To derive the NAAQS, the U.S. EPA reviews data from integrated science assessments and risk/exposure assessments to determine the ambient pollutant concentrations at which human health impacts occur, then reduces these concentrations to establish a margin of safety. As a result, human health impacts caused by the air pollutants discussed above may affect people when ambient air pollutant concentrations are at or above the concentrations established by the NAAQS. The closer a region is to attaining a particular NAAQS, the lower the human health impact is from that pollutant. Accordingly, ambient air pollutant concentrations below the NAAQS are considered to be protective of human health. The NAAQS and the underlying science that forms the basis of the NAAQS are reviewed every five years to determine whether updates are necessary to continue protecting public health with an adequate margin of safety.

NAAQS and CAAQS Attainment Status

California is divided geographically into 15 air basins for managing the air resources of the state on a regional basis. Areas within each air basin are considered to share the same air masses and,

therefore, are expected to have similar ambient air quality. If an air basin is not in either federal or state attainment for a particular pollutant, the basin is classified as a nonattainment area for that pollutant. Under the federal and state Clean Air Acts, once a nonattainment area has achieved the air quality standards for a particular pollutant, it may be redesignated to an attainment area for that pollutant. To be redesignated, the area must meet air quality standards and have a 10-year plan for continuing to meet and maintain air quality standards, as well as satisfy other requirements of the federal CAA. Areas that have been redesignated to attainment are called maintenance areas. As described in Section 2.1, *Local Climate and Meteorology* the project is within the SVAB.

The SVAB is in nonattainment for the federal 8-hour ozone standard, federal 24-hour PM_{2.5} standard, state 1-hour and 8-hour ozone standards, and state PM₁₀ 24-hour and annual standards (SMAQMD 2021). The area is classified attainment or unclassified/attainment for all other criteria pollutants.

State Air Quality Regulations

California Clean Air Act

The California Clean Air Act (CCAA) was enacted in 1988 (California Health & Safety Code (H&SC) Section 39000 et seq.). Under the CCAA, the State has developed the California Ambient Air Quality Standards (CAAQS), which are generally more stringent than the NAAQS. Table 2 lists the current state standards for regulated pollutants. In addition to the federal criteria pollutants, the CAAQS also specify standards for visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. Similar to the federal CAA, the CCAA classifies specific geographic areas as either “attainment” or “nonattainment” areas for each pollutant, based on the comparison of measured data within the CAAQS.

Toxic Air Contaminants

A toxic air contaminant (TAC) is an air pollutant that may cause or contribute to an increase in mortality or serious illness or which may pose a present or potential hazard to human health. TACs may result in long-term health effects such as cancer, birth defects, neurological damage, asthma, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation, runny nose, throat pain, and headaches. TACs are considered either carcinogenic or non-carcinogenic based on the nature of the health effects associated with exposure. For carcinogenic TACs, potential health impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Non-carcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

TACs include both organic and inorganic chemical substances. One of the main sources of TACs in California is diesel engines that emit exhaust containing solid material known as DPM; however, TACs may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities.

In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health (Assembly Bill [AB] 1807: Health and Safety Code Sections 39650–39674). The Legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

The California Air Toxics Program establishes the process for the identification and control of TACs and includes provisions to make the public aware of significant toxic exposures and for reducing risk. Additionally, the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly Bill) was enacted in 1987 and requires stationary sources to report the types and quantities of certain substances routinely released into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, identify facilities having localized impacts, ascertain health risks, notify nearby residents of significant risks, and reduce those significant risks to acceptable levels. The Children's Environmental Health Protection Act, California Senate Bill (SB) 25 (Chapter 731, Escutia, Statutes of 1999), focuses on children's exposure to air pollutants. The act requires the CARB to review its air quality standards from a children's health perspective, evaluate the statewide air quality monitoring network, and develop any additional air toxic control measures needed to protect children's health.

State Implementation Plan

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

Local Air Quality Regulations

Sacramento Metropolitan Air Quality Management District

The Sacramento Metropolitan Air Quality Management District (SMAQMD) is the air pollution control district for Sacramento County. SMAQMD's primary responsibility is ensuring that state and federal ambient air quality standards are attained and maintained in the SVAB. The SMAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, conducting public education campaigns, and many other activities.

The following SMAQMD rules would be applicable to the project:

- **Rule 402 (Nuisance)** – This rule prohibits the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.
- **Rule 403 (Fugitive Dust)** – This rule requires fugitive dust sources to implement best available control measures for all sources, and all forms of visible particulate matter are prohibited from crossing any property line. This rule is intended to reduce fugitive dust emissions into the atmosphere.

- **Rule 404 (Particulate Matter)** – This rule is intended to limit the quantity of particulate matter in the atmosphere through establishment of an emission concentration limit.
- **Rule 405 (Dust and Condensed Fumes)** – This rule is intended to limit the discharge of dust and condensed fumes into the atmosphere by establishing emission rates based on process weight.
- **Rule 442 (Architectural Coatings)** – This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce ROG emissions from the use of these coatings, primarily by placing limits on the ROG content of various coating categories.
- **Rule 453 (Cutback and Emulsified Asphalt Paving Materials)** – This rule is to limit emissions of volatile organic compounds from the use of cutback and emulsified asphalt in paving materials, paving and maintenance operations.

2.4 Current Air Quality

The SMAQMD operates a network of air quality monitoring stations throughout the SVAB. The purpose of the monitoring stations is to measure ambient concentrations of pollutants and determine whether ambient air quality meets the California and federal standards. The closest monitoring station is the Folsom-Natoma Street station, approximately 3.6 miles east of the project site. Table 3 indicates the number of days that the NAAQS and CAAQS for regulated pollutants in 2020, 2021, and 2022.

Table 3 Ambient Air Quality at the Nearest Monitoring Station

Pollutant	2020	2021	2022
8 Hour Ozone (ppm), 8-Hour Average ¹	0.036	0.096	0.074
Number of Days of state exceedances (>0.070 ppm)	0	29	3
Number of days of federal exceedances (>0.070 ppm)	0	29	3
Ozone (ppm), Worst Hour ¹	0.038	0.108	0.085
Number of days of state exceedances (>0.09 ppm)	0	5	0
Number of days of federal exceedances (>0.12 ppm)	0	0	0
Nitrogen Dioxide (ppm) - Worst Hour ¹	*	0.014	0.023
Number of days of state exceedances (>0.18 ppm)	*	0	0
Number of days of federal exceedances (>0.10 ppm)	*	0	0
Particulate Matter 10 microns, µg/m ³ , Worst 24 Hours ¹	*	*	*
Number of days of state exceedances (>50 µg/m ³)	*	*	*
Number of days above federal standard (>150 µg/m ³)	*	*	*
Particulate Matter <2.5 microns, µg/m ³ , Worst 24 Hour ¹²	19.6	265.7	73.0
Number of days above federal standard (>35 µg/m ³)	0	10	2

¹ Measurements were taken from the Folsom-Natoma Street station

*Insufficient data available to determine value

Source: CARB 2024

Sensitive Receptors

SMAQMD defines sensitive receptors as facilities that house or attract children, the elderly, and people with illnesses or others who are especially sensitive to the effects of air pollutants. Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors (SMAQMD 2020). The sensitive receptors nearest to the project site are the single-family house located to the north and an assisted living facility located to the west.

3 Air Quality Impact Analysis

3.1 Methodology

Air pollutant emissions generated by project construction and operation were estimated using the California Emissions Estimator Model (CalEEMod), version 2022.1. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. CalEEMod allows for the use of standardized data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs. The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices C, D, and G (California Air Pollution Control Officers Associated CAPCOA 2022). The analysis reflects construction and operation of the proposed project as described in Section 1.2.

Construction Emissions

Project construction would primarily generate temporary criteria pollutant emissions from construction equipment operation on-site, construction worker vehicle trips to and from the site, and import of materials off-site. CalEEMod defaults were used for other inputs, such as construction equipment, phasing, and worker trips.

Operational Emissions

Operational emissions modeled include mobile and area source emissions. Area source emissions are generated by landscape maintenance equipment, consumer products, and architectural coatings. The project would not include fireplaces and would not consume natural gas; therefore, the project would not emit energy emissions onsite. Mobile source emissions are generated by vehicle trips to and from the project site. The trip generation rates were based on CalEEMod defaults for the convenience store with gas station. The self-storage use does not have a directly applicable land use in CalEEMod; a warehouse land use was assumed in the model, with trip rates based off Institute of Transportation Engineers Trip Generation Manual 11th Edition trip rates for Mini-Warehouse (Land Use: 151) facility.³

3.2 Significance Thresholds

To determine whether a project would result in a significant impact to air quality, Appendix G of the CEQA Guidelines requires consideration of whether a project would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard;

³ The Trip Generation Manual defines a mini-warehouse use as "a building in which a number of storage units or vaults are rented for the storage of goods. They are typically referred to as "self-storage" facilities."

- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

SMAQMD thresholds are contained in their *Guide to Air Quality Assessment in Sacramento County* (SMAQMD 2020), and are summarized below.

Consistency with Air Quality Management Plans

Based on SMAQMD's *Guide to Air Quality Assessment in Sacramento County*, by exceeding the SMAQMD's mass emission thresholds for operational emissions of ROG, NO_x, PM₁₀ or PM_{2.5}, a project would be considered to conflict with or obstruct implementation of SMAQMD air quality planning efforts.

Regional Criteria Pollutant Thresholds

According to the SMAQMD, an air quality impact is considered significant if the project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The SMAQMD has established thresholds of significance for air quality during construction and operational activities of land use development projects, which are shown in Table 4.

Table 4 SMAQMD Air Quality Significance Thresholds

Pollutant	Construction	Operation
NO _x	85	65 pounds/day
ROG (VOC)	N/A	65 pounds/day
PM ₁₀	0; if all feasible BACT/BMPs are applied, then 80 pounds/day and 14.6 tons/year	0; if all feasible BACT/BMPs are applied, then 80 pounds/day and 14.6 tons/year
PM _{2.5}	0; if all feasible BACT/BMPs are applied, then 82 pounds/day and 15 tons/year	0; if all feasible BACT/BMPs are applied, then 82 pounds/day and 15 tons/year

NO_x = nitrogen oxides; ROG = reactive organic compounds; VOC = volatile organic compounds; PM₁₀ = particulate matter with a diameter no more than 10 microns; PM_{2.5} = particulate matter with a diameter no more than 2.5 microns; BACT = Best Available Control Technology; BMP = Best Management Practices

Source: SMAQMD 2020

Toxic Air Contaminants Thresholds

Based on SMAQMD's *Guide to Air Quality Assessment in Sacramento County*, the TAC thresholds for cancer risk are an incremental increase in cancer risk greater than 10 in one million at any off-site receptor. In addition, the non-cancer (hazard index) threshold is a ground-level concentration of project-generated TACs that would result in a Hazard Index greater than 1 at any off-site receptor.

3.3 Project-level Impact Analysis

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

Impact AQ-1 THE PROJECT WOULD NOT CONFLICT WITH OR OBSTRUCT THE IMPLEMENTATION OF THE APPLICABLE SMAQMD AIR QUALITY PLANS BECAUSE THE PROJECT WOULD NOT EXCEED SMAQMD MASS EMISSIONS THRESHOLDS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Based on SMAQMD's *Guide to Air Quality Assessment in Sacramento County*, by exceeding the SMAQMD's mass emission thresholds for operational emissions of ROG, NO_x, PM₁₀ or PM_{2.5}, a project would be considered to conflict with or obstruct implementation of SMAQMD air quality planning efforts. As discussed below under Threshold 2, construction and operation of the proposed project would not result in the generation of criteria air pollutants that would exceed SMAQMD thresholds of significance. Therefore, the proposed project would not conflict with the SMAQMD's ability to achieve emissions reductions as part of their air quality attainment plans, and impacts would be less than significant.

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

Impact AQ-2 PROJECT CONSTRUCTION AND OPERATION WOULD NOT RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF A CRITERIA POLLUTANT FOR WHICH THE PROJECT REGION IS IN NON-ATTAINMENT UNDER AN APPLICABLE FEDERAL OR STATE AMBIENT AIR QUALITY STANDARD. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Construction Emissions

Project construction would involve site preparation, grading, building construction, paving, and architectural coating activities that have the potential to generate air pollutant emissions. Construction of the proposed project would be required to comply with various SMAQMD rules, including SMAQMD's Basic Construction Emission Control Practices (discussed below under *Fugitive Dust Emissions*); reductions from these BMPs are conservatively not included in the modeling. Table 5 summarizes the estimated maximum daily emissions for VOC, NO_x, CO, SO_x, PM₁₀, and PM_{2.5} emissions. The maximum daily emissions from construction do not exceed SMAQMD thresholds. Therefore, project construction would not result in a cumulatively considerable net increase of criteria pollutants, and impacts would be less than significant.

Table 5 Construction Criteria Pollutant Emissions

	Pollutants (pounds per day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Maximum Daily Emissions	58	14	15	<1	8	4
SMAQMD Daily Thresholds	N/A	85	N/A	N/A	80	82
Threshold Exceeded?	N/A	No	N/A	N/A	No	No

lbs/day = pounds per day; VOC = volatile organic compounds; NO_x = nitrogen oxide; CO = carbon monoxide; PM₁₀ = particulate matter with a diameter no more than 10 microns; PM_{2.5} = particulate matter with a diameter no more than 2.5 microns; SO_x = sulfur oxide

See CalEEMod worksheets in Appendix A.

Fugitive Dust Emissions

Fugitive dust emissions are associated with land clearing, ground excavation, cut-and-fill operations, and truck travel on unpaved roadways. Dust emissions can vary substantially from day to day, depending on the level of activity, the specific operations, and weather conditions. Fugitive dust emissions may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the project vicinity. Uncontrolled dust from construction can become a nuisance and potential health hazard to those living and working nearby. The SMAQMD recommends implementation of all Basic Construction Emission Control Practices (SMAQMD 2021), whether or not construction-related emissions exceed applicable significance thresholds. The project would implement these BMPs to control dust at the project site during construction. The following controls would be included as specifications for the proposed project and implemented at the construction site:

- Control of fugitive dust is required by District Rule 403 and enforced by SMAQMD staff.
- Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways shall be covered.
- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).
- All roadways, driveways, sidewalks, parking lots to be paved shall be completed as soon as possible. In addition, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- The following practices describe exhaust emission control from diesel powered fleets working at a construction site. California regulations limit idling from both on-road and off-road diesel-powered equipment. The California Air Resources Board (CARB) enforces idling limitations and compliance with diesel fleet regulations.
 - Idling time shall be minimized either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Clear signage shall be provided that posts this requirement for workers at the entrances to the site.
 - Current certificate(s) of compliance for CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation [California Code of Regulations, Title 13, sections 2449 and 2449.1] shall be provided.
 - All construction equipment shall be maintained in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.

Operational Emissions

The project would generate criteria pollutants during operation. To determine whether a project would result in emissions that would violate an air quality standard or contribute substantially to an

existing or projected air quality violation, a project's emissions are evaluated based on the quantitative emission thresholds established by the SMAQMD.

Table 6 summarizes the project's operational emissions by emission source (area and mobile). As shown below, the emissions generated by operation of the proposed project would not exceed SMAQMD's thresholds for criteria pollutants. Therefore, the project would not contribute substantially to an existing or projected air quality violation. In addition, because criteria pollutant emissions and regional thresholds are cumulative in nature, the project would not result in a cumulatively considerable net increase of criteria pollutants.

Table 6 Operational Criteria Pollutant Emissions

Emission Source	Pollutants (pounds per day)					
	VOC	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area	3	<1	4	<1	<1	<1
Mobile	8	8	66	<1	12	3
Maximum Daily Emissions	11	8	70	<1	12	3
<i>SMAQMD Daily Thresholds</i>	<i>65</i>	<i>65</i>	<i>N/A</i>	<i>N/A</i>	<i>80</i>	<i>82</i>
Threshold Exceeded?	No	No	N/A	N/A	No	No

lbs/day = pounds per day; VOC = volatile organic compounds; NO_x = nitrogen oxide; CO = carbon monoxide; PM₁₀ = particulate matter with a diameter no more than 10 microns; PM_{2.5} = particulate matter with a diameter no more than 2.5 microns; SO_x = sulfur oxide
 See CalEEMod worksheets in Appendix A.

Threshold 3	Would the project expose sensitive receptors to substantial pollutant concentrations?
--------------------	---

Impact AQ-3 **DEPENDING ON FUEL THROUGHPUT, THE GAS STATION USE MAY RESULT IN A POTENTIALLY SIGNIFICANT HEALTH RISK IMPACT. THIS WOULD BE MITIGATED TO LESS THAN SIGNIFICANT WITH MITIGATION MEASURE AQ-1.**

Toxic Air Contaminants

Construction Impacts

Construction-related activities would result in temporary project-generated emissions of DPM exhaust emissions from off-road, heavy-duty diesel equipment for site preparation, grading, building construction, and other construction activities. Generation of DPM from construction projects typically occurs in a single area for a short period. Construction of the proposed project would occur over approximately 12 months. The dose to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has with the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the Maximally Exposed Individual. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 70-year exposure

period; however, such assessments should be limited to the period/duration of activities associated with the project. Thus, the duration of proposed construction activities (i.e., 12 months) is three percent of the total exposure period used for health risk calculation. Therefore, DPM generated by project construction would not create conditions where the probability is greater than 10 in one million of contracting cancer for the Maximally Exposed Individual or to generate ground-level concentrations of non-carcinogenic TACs that exceed a Hazard Index greater than one for the Maximally Exposed Individual. This impact would be less than significant.

Operational Impacts

The proposed project would be a source of gasoline vapors that would include toxic air contaminants TACs such as benzene, methyl tertiary-butyl ether, toluene, and xylene. Benzene is the primary TAC associated with gas stations. Gasoline vapors are released during the filling of the stationary underground storage tanks (USTs) and during the transfer from those underground tanks to individual vehicles. All tanks and dispensers would be equipped with the latest Phase I and Phase II Enhanced Vapor Recovery (EVR) air pollution control equipment technology per CARB regulations and associated Executive Orders. The Phase I EVR equipment controls the vapors in the return path from the onsite fuel storage tanks back to the tanker truck during offloading filling operations. Phase I EVR systems are 98 percent effective in controlling fugitive emissions from escaping into the environment. The Phase II EVR equipment, which also includes “in-station diagnostics,” controls and monitors the vapors in the return path from the fuel dispensers back to the onsite fuel storage tanks. Phase II EVR systems are 95 percent effective in controlling fugitive emissions from escaping into the environment.

The project would require a permit to construct and operate a gasoline dispensing facility from the SMAQMD. The district would review the facility design and location for compliance with SMAQMD standards for air quality and community health. At present, SMAQMD staff runs individual assessments on all new service stations or projects where a school is located within 1,000 feet of the project site and there is an increase in emissions. There are no schools located within 1,000 feet of the project site (the nearest school is the Andrew Carnegie Middle School, located 1,700 feet to the south). There is an assisted living facility located approximately 100 feet west of the nearest project fuel pump; in addition, residences to the north are located approximately 420 feet from the nearest pump, and residences further to the west are located approximately 330 feet from the nearest pump.

CARB’s land use guidelines for gas stations state to avoid siting sensitive land uses within 300 feet of a large gas station, defined as a facility with a throughput of 3.6 million gallons per year or greater, or a 50-foot separation if the throughput is less than 3.6 million gallons per year (CARB 2005). This is typically interpreted as from the gasoline source (fuel pumps) to the nearest sensitive receptor location. At this stage of project planning, the fuel throughput of the project’s gas station is unknown, and therefore may equal or exceed 3.6 million gallons per year. If the fuel throughput equals or exceeds this limit, the project would have the potential for health risk impacts from TAC emissions from exceed SMAQMD’s significant risk threshold of 10 per million for cancer risk and a Hazard Index of more than 1.0 for non-cancer risk, and impacts would be potentially significant. This would be mitigated through a project-specific Health Risk Assessment (HRA) under Mitigation Measure AQ-1.

If the project’s gas station fuel throughput is less than 3.6 million gallons per year, the emission of TACs from the gas station would not be anticipated to result in a substantial health risk and impacts would be less than significant given the following: the siting of the project at a distance of at least

100 feet from nearby sensitive receptors; and that the project would comply with applicable SMAQMD regulations and standards regarding gas station design such as Rules 448 and 449, which require installation of the latest Phase I and Phase II EVR air pollution control equipment technology.

Other long-term operational TAC emissions include toxic substances such as cleaning agents in use on-site. Compliance with state and federal handling regulations would ensure that emissions remain below a level of significance. The use of such substances such as cleaning agents is regulated by the 1990 CAA Amendments as well as state-adopted regulations for the chemical composition of consumer products. Therefore, long-term operation of the project would not result in the exposure of sensitive receptors to substantial pollutant concentrations and the impact would be less than significant.

Mitigation Measure

AQ-1 Gas Station Health Risk Assessment

If the project's gas station fuel throughput equals or exceeds 3.6 million gallons per year, an HRA shall be completed to determine the health risk impacts from the gas station prior to the approval of building permits for the gas station, in accordance with the SMAQMD guidelines. The performance standard shall be the significant risk threshold identified by the SMAQMD of 10 per million for cancer risk and a Hazard Index of more than 1.0 for non-cancer risk. If the project exceeds the performance standard, mitigation measures shall be identified in the HRA to reduce impacts to below the standard. Measures may include the use of advanced vapor recovery systems.

Significance after Mitigation

With implementation of Mitigation Measure AQ-1, health risk impacts from the gas station would be less than significant.

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

Impact AQ-4 THE PROJECT WOULD NOT GENERATE ODORS ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE DURING CONSTRUCTION OR OPERATION. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

SMAQMD Rule 402 prohibits the discharge of air contaminants that could be a nuisance or an annoyance. This prohibition includes potential odors. Odors that may be generated at the project site include gasoline vapors. Generally, these odors are only detectable on the project site and will readily dissipate. In accordance with SMAQMD Rules 448 and 449, vapor recovery systems would be required. In addition, solid waste generated by the proposed on-site uses would be collected by a contracted waste hauler, ensuring that any odors resulting from on-site waste would be managed and collected in a manner to prevent the proliferation of odors. Operational odor impacts would be less than significant.

For construction activities, odors would be short-term in nature and are also subject to SMAQMD Rule 402. Construction activities would be temporary and transitory and associated odors would cease upon construction completion. Accordingly, the proposed project would not create objectionable odors affecting a substantial number of people during construction, and short-term impacts would be less than significant.

4 Greenhouse Gas Emissions

4.1 Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. The term "climate change" is often used interchangeably with the term "global warming," but climate change is preferred because it conveys that other changes are happening in addition to rising temperatures. The baseline against which these changes are measured originates in historical records that identify temperature changes that occurred in the past, such as during previous ice ages. The global climate is changing continuously, as evidenced in the geologic record which indicates repeated episodes of substantial warming and cooling. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming over the past 150 years. The United Nations Intergovernmental Panel on Climate Change (IPCC) expressed a high degree of confidence (95 percent or greater chance) that the global average net effect of human activities has been the dominant cause of warming since the mid-twentieth century (IPCC 2014a).

Gases that absorb and re-emit infrared radiation in the atmosphere are called GHGs. The gases widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO₂), methane (CH₄), nitrous oxides (N₂O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere, and natural processes, such as oceanic evaporation, largely determine its atmospheric concentrations.

GHGs are emitted by natural processes and human activities. Of these gases, CO₂ and CH₄ are emitted in the greatest quantities from human activities. Emissions of CO₂ are usually by-products of fossil fuel combustion, and CH₄ results from off-gassing associated with agricultural practices and landfills. Human-made GHGs, many of which have greater heat-absorption potential than CO₂, include fluorinated gases and SF₆ (USEPA 2020b).

Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO₂) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon dioxide equivalent" (CO₂e), which is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 28, meaning its global warming effect is 28 times greater than CO₂ on a molecule per molecule basis (IPCC 2014b).⁴

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat-trapping effect of GHGs, the earth's surface would be about 33 degrees Celsius (°C) cooler (World Meteorological Organization 2020). However, since 1750, estimated concentrations of CO₂, CH₄, and N₂O in the atmosphere have increased by 36 percent, 148 percent, and 18 percent,

⁴ The IPCC's (2014b) *Fifth Assessment Report* determined that methane has a GWP of 28. However, modeling of GHG emissions was completed using the California Emissions Estimator Model version 2016.3.2, which uses a GWP of 25 for methane, consistent with the IPCC's (2007) *Fourth Assessment Report*.

respectively, primarily due to human activity (Forster et al. 2007). GHG emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of concentrations that occur naturally.

4.2 Greenhouse Gas Emissions Inventory

Global Emissions Inventory

Worldwide anthropogenic emissions of GHGs were approximately 49,000 million metric tons (MMT) CO₂e in 2010 (IPCC 2014a). Carbon dioxide emissions from fossil fuel combustion and industrial processes contributed about 65 percent of total emissions in 2010. Of anthropogenic GHGs, CO₂ was the most abundant, accounting for over 75 percent of total 2010 emissions. Methane emissions accounted for 16 percent of the 2010 total, while N₂O and fluorinated gases accounted for 6 percent and 2 percent respectively (IPCC 2014a).

United States Emissions Inventory

Total United States (U.S.) GHG emissions were 6,676.6 MMT CO₂e in 2018. Emissions increased by 2.9 percent from 2017 to 2018, and since 1990, total U.S. emissions have increased by an average annual rate of 0.13 percent for a total increase of 3.7 percent between 1990 and 2018. The increase from 2017 to 2018 was primarily driven by increased fossil fuel combustion because of multiple factors, including increased energy usage from greater heating and cooling needs due to a colder winter and hotter summer in 2018 as compared to 2017. In 2018, the transportation and industrial end-use sectors accounted for 36 percent and 26 percent, respectively, of nationwide GHG emissions while the residential and commercial end-use sectors accounted for 20 percent and 17 percent of nationwide GHG emissions, respectively, with electricity emissions distributed among the various sectors (USEPA 2020b).

California Emissions Inventory

Based on CARB's California Greenhouse Gas Inventory for 2000-2018, California produced 425.3 MMT CO₂e in 2018. The major source of GHG emissions in California is the transportation sector, which comprises 41 percent of the state's total GHG emissions. The industrial sector is the second largest source, comprising 24 percent of the state's GHG emissions while electric power accounts for approximately 15 percent (CARB 2020). The magnitude of California's total GHG emissions is due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions as compared to other states is its relatively mild climate. In 2016, the State of California achieved its 2020 GHG emission reduction target of reducing emissions to 1990 levels as emissions fell below 431 MMT CO₂e (CARB 2020a). The annual 2030 statewide target emissions level is 260 MMT CO₂e (CARB 2017).

4.3 Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources though potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Each of the past three decades has been warmer than all the previous decades in the instrumental record, and

the decade from 2000 through 2010 has been the warmest. The observed global mean surface temperature (GMST) from 2015 to 2017 was approximately 1.0°C higher than the average GMST over the period from 1880 to 1900 (National Oceanic and Atmospheric Administration 2020). Furthermore, several independently analyzed data records of global and regional Land-Surface Air Temperature (LSAT) obtained from station observations jointly indicate that LSAT and sea surface temperatures have increased. Due to past and current activities, anthropogenic GHG emissions are increasing global mean surface temperature at a rate of 0.2°C per decade. In addition to these findings, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic over the past two decades (IPCC 2014a and 2018).

According to *California's Fourth Climate Change Assessment*, statewide temperatures from 1986 to 2016 were approximately 0.6 to 1.1°C higher than those recorded from 1901 to 1960. Potential impacts of climate change in California may include reduced water supply from snowpack, sea level rise, more extreme heat days per year, more large forest fires, and more drought years (State of California 2018). In addition to statewide projections, *California's Fourth Climate Change Assessment* includes regional reports that summarize climate impacts and adaptation solutions for nine regions of the state and regionally specific climate change case studies (State of California 2018). However, while there is growing scientific consensus about the possible effects of climate change at a global and statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. A summary follows of some of the potential effects that could be experienced in California because of climate change.

Air Quality

Scientists project that the annual average maximum daily temperatures in California could rise by 2.4 to 3.2°C in the next 50 years and by 3.1 to 4.9°C in the next century (State of California 2018). Higher temperatures are conducive to air pollution formation, and rising temperatures could therefore result in worsened air quality in California. As a result, climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. In addition, as temperatures have increased in recent years, the area burned by wildfires throughout the state has increased, and wildfires have occurred at higher elevations in the Sierra Nevada Mountains (State of California 2018). If higher temperatures continue to be accompanied by an increase in the incidence and extent of large wildfires, air quality could worsen. Severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains could tend to temporarily clear the air of particulate pollution, which would effectively reduce the number of large wildfires and thereby ameliorate the pollution associated with them (California Natural Resources Agency 2009).

Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future precipitation trends and water supplies in California. Year-to-year variability in statewide precipitation levels has increased since 1980, meaning that wet and dry precipitation extremes have become more common (California Department of Water Resources 2018). This uncertainty regarding future precipitation trends complicates the analysis of

future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The average early spring snowpack in the western U.S., including the Sierra Nevada Mountains, decreased by about 10 percent during the last century. During the same period, sea level rose over 0.15 meter along the central and southern California coasts (State of California 2018). The Sierra snowpack provides the majority of California's water supply as snow that accumulates during wet winters is released slowly during the dry months of spring and summer. A warmer climate is predicted to reduce the fraction of precipitation that falls as snow and the amount of snowfall at lower elevations, thereby reducing the total snowpack (State of California 2018). Projections indicate that average spring snowpack in the Sierra Nevada and other mountain catchments in central and northern California will decline by approximately 66 percent from its historical average by 2050 (State of California 2018).

Hydrology and Sea Level Rise

Climate change could affect the intensity and frequency of storms and flooding (State of California 2018). Furthermore, climate change could induce substantial sea level rise in the coming century. Rising sea level increases the likelihood of and risk from flooding. The rate of increase of global mean sea levels between 1993 to 2020, observed by satellites, is approximately 3.3 millimeters per year, double the twentieth century trend of 1.6 millimeters per year (World Meteorological Organization 2013; National Aeronautics and Space Administration 2020). Global mean sea levels in 2013 were about 0.23 meter higher than those of 1880 (National Aeronautics and Space Administration 2020). Sea levels are rising faster now than in the previous two millennia, and the rise will probably accelerate, even with robust GHG emission control measures. The most recent IPCC report predicts a mean sea level rise of 0.25 to 0.94 meter by 2100 (IPCC 2018). A rise in sea levels could erode 31 to 67 percent of southern California beaches and cause flooding of approximately 370 miles of coastal highways during 100-year storm events. This would also jeopardize California's water supply due to saltwater intrusion and induce groundwater flooding and/or exposure of buried infrastructure (State of California 2018). Furthermore, increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture

California has an over \$50 billion annual agricultural industry that produces over a third of the country's vegetables and two-thirds of the country's fruits and nuts (California Department of Food and Agriculture 2020). Higher CO₂ levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, certain regions of agricultural production could experience water shortages of up to 16 percent, which would increase water demand as hotter conditions lead to the loss of soil moisture. In addition, crop yield could be threatened by water-induced stress and extreme heat waves, and plants may be susceptible to new and changing pest and disease outbreaks (State of California 2018). Temperature increases could also change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality (California Climate Change Center 2006).

Ecosystems and Wildlife

Climate change and the potential resultant changes in weather patterns could have ecological effects on the global and local scales. Soil moisture is likely to decline in many regions as a result of higher temperatures, and intense rainstorms are likely to become more frequent. Rising

temperatures could have four major impacts on plants and animals: timing of ecological events; geographic distribution and range of species; species composition and the incidence of nonnative species within communities; and ecosystem processes, such as carbon cycling and storage (Parmesan 2006; State of California 2018).

4.4 Regulatory and Legal Setting

Federal Regulations

Federal Clean Air Act

The U.S. Supreme Court determined in *Massachusetts et al. v. Environmental Protection Agency et al.* ([2007] 549 U.S. 05-1120) that USEPA has the authority to regulate motor vehicle GHG emissions under the federal Clean Air Act. USEPA issued a Final Rule for mandatory reporting of GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of emissions. In 2012, USEPA issued a Final Rule that established the GHG permitting thresholds that determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities.

In *Utility Air Regulatory Group v. Environmental Protection Agency* (134 Supreme Court 2427 [2014]), the U.S. Supreme Court held the USEPA may not treat GHGs as an air pollutant for purposes of determining whether a source can be considered a major source required to obtain a Prevention of Significant Deterioration or Title V permit. The Court also held that Prevention of Significant Deterioration permits otherwise required based on emissions of other pollutants may continue to require limitations on GHG emissions based on the application of Best Available Control Technology.

State Regulations

CARB is responsible for the coordination and oversight of state and local air pollution control programs in California. There are numerous regulations aimed at reducing the state's GHG emissions. These initiatives are summarized below. For more information on the Senate and Assembly Bills, executive orders, building codes, and reports discussed below, and to view reports and research referenced below, please refer to the following websites:

<https://www.energy.ca.gov/data-reports/reports/californias-fourth-climate-change-assessment>, www.arb.ca.gov/cc/cc.htm, and <https://www.dgs.ca.gov/BSC/Codes>.

California Global Warming Solutions Act of 2006 (Assembly Bill 32 and Senate Bill 32)

AB 1279, "The California Climate Crisis Act," was passed on September 16, 2022, and declares the State would achieve net zero GHG emissions as soon as possible, but no later than 2045, and to achieve and maintain net negative GHG emissions thereafter. In addition, the bill states that the State would reduce GHG emissions by 85 percent below 1990 levels no later than 2045. In response to the passage of AB 1279 and the identification of the 2045 GHG reduction target, CARB published the Final 2022 Climate Change Scoping Plan in November 2022 (CARB 2022). The 2022 Update builds upon the framework established by the 2008 Climate Change Scoping Plan and previous updates while identifying new, technologically feasible, cost-effective, and equity-focused path to achieve California's climate target. The 2022 Update includes policies to achieve a significant reduction in fossil fuel combustion, further reductions in short-lived climate pollutants, support for sustainable

development, increased action on natural and working lands (NWL) to reduce emissions and sequester carbon, and the capture and storage of carbon.

The 2022 Update assesses the progress California is making toward reducing its GHG emissions by at least 40 percent below 1990 levels by 2030, as called for in SB 32 and laid out in the 2017 Scoping Plan, addresses recent legislation and direction from Governor Newsom, extends and expands upon these earlier plans, and implements a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045, as well as taking an additional step of adding carbon neutrality as a science-based guide for California's climate work. As stated in the 2022 Update, "The plan outlines how carbon neutrality can be achieved by taking bold steps to reduce GHGs to meet the anthropogenic emissions target and by expanding actions to capture and store carbon through the state's NWL and using a variety of mechanical approaches" (CARB 2022). Specifically, the 2022 Update:

- Identifies a path to keep California on track to meet its SB 32 GHG reduction target of at least 40 percent below 1990 emissions by 2030.
- Identifies a technologically feasible, cost-effective path to achieve carbon neutrality by 2045 and a reduction in anthropogenic emissions by 85 percent below 1990 levels.
- Focuses on strategies for reducing California's dependency on petroleum to provide consumers with clean energy options that address climate change, improve air quality, and support economic growth and clean sector jobs.
- Integrates equity and protecting California's most impacted communities as driving principles throughout the document.
- Incorporates the contribution of NWL to the state's GHG emissions, as well as their role in achieving carbon neutrality.
- Relies on the most up-to-date science, including the need to deploy all viable tools to address the existential threat that climate change presents, including carbon capture and sequestration, as well as direct air capture.
- Evaluates the substantial health and economic benefits of taking action.
- Identifies key implementation actions to ensure success.

In addition to reducing emissions from transportation, energy, and industrial sectors, the 2022 Update includes emissions and carbon sequestration in NWL and explores how NWL contribute to long-term climate goals. Under the Scoping Plan Scenario, California's 2030 emissions are anticipated to be 48 percent below 1990 levels, representing an acceleration of the current SB 32 target. Cap-and-Trade regulation continues to play a large factor in the reduction of near-term emissions for meeting the accelerated 2030 reduction target. Every sector of the economy will need to begin to transition in this decade to meet our GHG reduction goals and achieve carbon neutrality no later than 2045. The 2022 Update approaches decarbonization from two perspectives, managing a phasedown of existing energy sources and technologies, as well as increasing, developing, and deploying alternative clean energy sources and technology.

Senate Bill 375

The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the state's ability to reach AB 32 goals by directing the CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. SB 375 aligns

regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPOs) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPO's Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy (categorized as "transit priority projects") can receive incentives to streamline CEQA processing.

On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. SCAG was assigned targets of an 8 percent reduction in per capita GHG emissions from passenger vehicles by 2020 and a 19 percent reduction in per capita GHG emissions from passenger vehicles by 2035. In the SCAG region, SB 375 also provides the option for the coordinated development of subregional plans by the subregional councils of governments and the county transportation commissions to meet SB 375 requirements.

Senate Bill 1383

Adopted in September 2016, Senate Bill 1383 (SB 1383) (Lara, Chapter 395, Statutes of 2016) requires the CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. SB 1383 requires the strategy to achieve the following reduction targets by 2030:

- Methane – 40 percent below 2013 levels
- Hydrofluorocarbons – 40 percent below 2013 levels
- Anthropogenic black carbon – 50 percent below 2013 levels

SB 1383 also requires the California Department of Resources Recycling and Recovery (CalRecycle), in consultation with the CARB, to adopt regulations that achieve specified targets for reducing organic waste in landfills.

Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard (RPS) Program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Executive Order B-55-18

On September 10, 2018, the former Governor Brown issued Executive Order (EO) B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

California Building Standards Code

The California Code of Regulations (CCR) Title 24 is referred to as the California Building Standards Code. It consists of a compilation of several distinct standards and codes related to building construction including plumbing, electrical, interior acoustics, energy efficiency, and handicap accessibility for persons with physical and sensory disabilities. The current iteration is the 2022 Title 24 standards. The California Building Standards Code's energy-efficiency and green building standards are outlined below.

PART 6 – BUILDING ENERGY EFFICIENCY STANDARDS/ENERGY CODE

CCR Title 24, Part 6 is the Building Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy demand. New construction and major renovations must demonstrate their compliance with the current Energy Code through submittal and approval of a Title 24 Compliance Report to the local building permit review authority and the California Energy Commission (CEC). The 2022 Title 24 standards are the applicable building energy efficiency standards for the proposed Project because they became effective on January 1, 2023.

PART 11 – CALIFORNIA GREEN BUILDING STANDARDS

The California Green Building Standards Code, referred to as CALGreen, was added to Title 24 as Part 11, first in 2009 as a voluntary code, which then became mandatory effective on January 1, 2011 (as part of the 2010 California Building Standards Code). The 2022 CALGreen includes mandatory minimum environmental performance standards for all ground-up new construction of residential and non-residential structures. It also includes voluntary tiers with stricter environmental performance standards for these same categories of residential and non-residential buildings. Local jurisdictions must enforce the minimum mandatory CALGreen standards and may adopt additional amendments for stricter requirements.

California Integrated Waste Management Act (Assembly Bill 341)

The California Integrated Waste Management Act of 1989, as modified by AB 341 in 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 and (2) diversion of 50 percent of all solid waste on and after January 1, 2000.

Executive Order N-79-20

On September 23, 2020, Governor Newsom issued EO N-79-20, which established the following new statewide goals:

- All new passenger cars and trucks sold in-state to be zero-emission by 2035;
- All medium- and heavy-duty vehicles in the state to be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks; and
- All off-road vehicles and equipment to be zero-emission by 2035 where feasible.

EO N-79-20 directs CARB, the Governor's Office of Business and Economic Development, the CEC, the California Department of Transportation, and other state agencies to take steps toward drafting regulations and strategies and leveraging agency resources toward achieving these goals.

The California Climate Crisis Act (Assembly Bill 1279)

AB 1279 was passed on September 16, 2022 and declares the State would achieve net zero greenhouse gas emissions as soon as possible, but no later than 2045. In addition, achieve and maintain net negative greenhouse gas emissions and ensure that by 2045, statewide anthropogenic greenhouse gas emissions are reduced to at least 85% below the 1990 levels. The bill would require updates to the scoping plan (once every five years) to implement various policies and strategies that enable carbon dioxide removal solutions and carbon capture, utilization, and storage technologies.

Clean Energy, Jobs, and Affordability Act of 2022 (Senate Bill 1020)

Adopted on September 16, 2022, SB 1020 creates clean electricity targets for eligible renewable energy resources and zero-carbon resources to supply 90 percent of retail sale electricity by 2035, 95 percent by 2040, 100 percent by 2045, and 100 percent of electricity procured to serve all state agencies by 2035. This bill shall not increase carbon emissions elsewhere in the western grid and shall not allow resource shuffling.

Local Regulations

Sacramento Metropolitan Transportation Plan/Sustainable Communities Strategy

The Sacramento Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) supports the Sacramento Region Blueprint and links land use, air quality, and transportation needs. As the state and federally designated MPO for the region, the Sacramento Area Council of Governments (SACOG) is responsible for developing the MTP/SCS in coordination with Sacramento, Yolo, Yuba, Sutter, El Dorado, and Placer counties. The most recent version of the MTP/SCS was adopted in November 2019 and covers 2020 to 2040 (SACOG 2020). The 2020 MTP/SCS is a multimodal transportation plan that is guided by four priority policy areas: build vibrant places for today's and tomorrow's residents; foster the next generation of mobility solutions; modernize the way we pay for transportation infrastructure; and build and maintain a safe, reliable, and multimodal transportation system. The MTP/SCS includes a regional growth forecast and projected land use pattern (residential and employment) to accommodate estimated increases in population, employment, and housing. It also reports on historical vehicle miles traveled (VMT) data, observed VMT trends, and forecasted VMT through 2040.

Sacramento County Climate Action Plan

In November of 2011, Sacramento County approved the Phase 1 Climate Action Plan Strategy and Framework document (Phase 1 CAP), which is the first phase of developing a community-level Climate Action Plan. The Phase 1 CAP provides a framework and overall policy strategy for reducing greenhouse gas emissions and managing our resources in order to comply with AB 32. It also highlights actions already taken to become more efficient and targets future mitigation and adaptation strategies. The CAP contains policies/goals related to agriculture, energy, transportation/land use, waste, and water.

The County adopted the Phase 2A CAP (Government Operations) on September 11, 2012. Neither the Phase 1 CAP nor the Phase 2A CAP are "qualified" plans through which subsequent projects may receive CEQA streamlining benefits. The Communitywide CAP (Phase 2B) is in progress, with Sacramento County releasing a Final Communitywide CAP in September 2022. The Final CAP details specific measures that will be implemented in the County by 2030 to reduce GHG emissions from communitywide activities and government operations. It also includes an adaptation plan that recommends actions to reduce the community's vulnerability to the anticipated impacts of climate change. The Final CAP has been developed in response to mitigation measures contained in the County's General Plan, the County's adoption of a Climate Emergency Resolution in December 2020, and State legislation including Assembly Bill 32, SB 32, and SB 743 as well as Executive Orders S-3-05 and B-55-18. The strategies and measures contained in the Final Draft CAP complement a wide range of policies, plans, and programs that have been adopted by the County, State, and regional agencies to protect communities from hazards and activities contributing to GHG emissions. However, as of March 2024, the Final CAP has not been adopted by the County, and there is no anticipated date for adoption.

County of Sacramento General Plan

The Energy Element of the County of Sacramento General Plan includes goals and policies that would have the effect of reducing GHG emissions. These include reversing the historical trend of increasing per capita consumption of energy; shifting toward using a greater share of renewable sources of energy; and shifting seasonal and daily peak energy demands to increase the load factor of electrical generating facilities, while maintaining or enhancing the general standard of living, the level of employment, and the quality of the environment.

5 Greenhouse Gas Impact Analysis

5.1 Methodology

Calculations of CO₂, CH₄, and N₂O emissions are provided to identify the magnitude of potential project effects. The analysis focuses on CO₂, CH₄, and N₂O because these comprise 98 percent of all GHG emissions by volume and are the GHG emissions the proposed Project would emit in the largest quantities (IPCC 2014). Emissions of all GHGs are converted into their equivalent GWP in terms of CO₂ (i.e., CO₂e). GHG emissions associated with project construction and operational activity were calculated using the CalEEMod version 2022.1 (see Appendix A for calculations).

Construction Emissions

During construction, the proposed project would generate GHG emissions primarily from the use of internal combustion engines to power on-site equipment as well as off-site transportation of workers and materials. The methodology described in Section 3.1 for air quality construction emissions remain the same for estimating constructing GHG emissions.

Operational Emissions

The analysis uses CalEEMod assumptions for mobile, area, and waste sources for the convenience store, gas station, and mini-storage facility. Emissions were estimated with the assumptions described under Section 3.1. For carbon offset purposes, the lifetime of the project was assumed to be 30 years, in accordance with guidance from the South Coast Air Quality Management District (SCAQMD; 2008).

5.2 Significance Thresholds

Based on Appendix G of the CEQA Guidelines, impacts related to GHG emissions from the proposed project would be significant if the project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The vast majority of individual projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a project can contribute incrementally to significant cumulative effects, even if individual changes resulting from a project are limited. As a result, the issue of climate change typically involves an analysis of whether a project's contribution towards an impact would be cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines Section 15064[h][1]).

According to CEQA Guidelines Section 15183.5, projects can tier off of a qualified GHG reduction plan, which allows for project-level evaluation of GHG emissions through the comparison of the project's consistency with the GHG reduction policies included in a qualified GHG reduction plan.

This approach is considered by the Association of Environmental Professionals (AEP) in their white paper, *Beyond Newhall and 2020*, to be the most defensible approach presently available under CEQA to determine the significance of a project’s GHG emissions (AEP 2016). While Sacramento County has adopted a Phase 1 CAP (strategy and framework document) and Phase 2A CAP (Government Operations), the plans are developed in accordance with AB 32 reduction goals up to 2020, and not with SB 32 reduction goals up to 2030 or later goals. As the project is operational after 2020, the plans would not apply to the project. A revised Communitywide CAP is currently being completed to address these later GHG goals, with the document going out for public review in early 2024. However, no timeline has been established for adoption of the revised Communitywide CAP, and thus this plan would not apply to the project.

For a project-specific threshold, Sacramento County has selected the thresholds from the local air district, SMAQMD. In April 2020, SMAQMD adopted an update to their land development GHG threshold. The SMAQMD’s thresholds are shown in Table 7.

Table 7 SMAQMD GHG Thresholds

Construction	Operation
1,100 MT CO ₂ e	Demonstrate consistency with the Climate Change Scoping Plan by implementing applicable BMPs (below), or equivalent on-site or off-site mitigation. All projects must implement tier 1 BMPs (BMP 1 & 2): <i>BMP 1: No Natural Gas</i> - projects shall be designed and constructed without natural gas infrastructure. <i>BMP 2: Electric Vehicle Ready</i> - projects shall meet the current CALGreen Tier 2 standards, except all electric vehicle capable spaces shall instead be electric vehicle ready.¹ Projects that exceed 1,100 MT CO₂e per year after implementation of tier 1 BMPs must implement tier 2 BMPs (BMP 3): BMP 3 - residential projects shall achieve a 15% reduction in vehicle miles traveled per resident and office projects shall achieve a 15% reduction in vehicle miles traveled per worker compared to existing average vehicle miles traveled for the county, and retail projects shall achieve a no net increase in total vehicle miles traveled to show consistency with SB 743.

Source: SMAQMD 2020a

MT = metric tons; CO₂e = carbon dioxide equivalent

¹ “EV Capable” parking spaces have electrical panel capacity, a dedicated branch circuit and a listed raceway to the EV parking spot to accommodate a dedicated 208/40-volt branch circuit to support future installation of charging stations. “EV Ready” parking spaces have installed electrical panel capacity and raceway with conduit that terminate in a junction box or 240-Volt charging outlet.

The SMAQMD provides additional details on their GHG thresholds in their *Guide to Air Quality Assessment in Sacramento County* (SMAQMD 2021), *Greenhouse Gas Thresholds for Sacramento County* document (SMAQMD 2020b), and the *Greenhouse Gas Thresholds/Best Management Practices Applicability Flowchart* (SMAQMD 2020c). Projects that do not implement the tier 1 BMPs must conduct additional calculations to determine excess emissions and provide measures either on-site or off-site to provide equivalent mitigation. Off-site reductions may include purchasing and retiring GHG/carbon offsets. For example, a project may quantify the CO₂e reductions from meeting the CALGreen Tier 2 EV charger requirement, where all electric vehicle capable spaces shall instead be electric vehicle ready; then for the EV chargers that are not feasible, those CO₂e reduction can be achieved through additional on-site or off-site measures. According to the flowchart, a project may “recheck” emissions to see if the project would not exceed the 1,100 MT CO₂e threshold before

having to address to tier 2 BMPs, and if the project has committed to all-electric infrastructure, no further action would be needed and tier 2 BMPs would not need to be addressed.

5.3 Project-level Impact Analysis

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

IMPACT GHG-1 CONSTRUCTION AND OPERATION OF THE PROJECT WOULD NOT RESULT IN GHG EMISSIONS THAT EXCEED SMAQMD THRESHOLDS.

Construction Emissions

Construction of the proposed project would generate temporary GHG emissions primarily from the operation of construction equipment on-site as well as from vehicles transporting construction workers to and from the project site and heavy trucks to transport building materials and soil export. As shown in Table 8, construction of the proposed project would generate an estimated total of 285 MT CO₂e. This would be below the SMAQMD construction threshold of 1,100 MT CO₂e. Therefore, construction GHG emissions impacts would be less than significant.

Table 8 Estimated Construction GHG Emissions

Construction	Project Emissions MT CO ₂ e
2025	285
Exceed SMAQMD Construction Threshold of 1,100 MT CO ₂ e?	No
MT CO ₂ e = metric tons of carbon dioxide equivalent	
Source: Appendix A	

Operational Emissions

Operation of the proposed project would generate GHG emissions associated with area sources (e.g., landscape maintenance), energy and water usage, vehicle trips, waste generation, and refrigerants. Per SMAQMD thresholds, the project must implement tier 1 BMPs, or equivalent on-site or off-site measures. The project would implement BMP 1: No Natural Gas.

BMP 2: Electric Vehicle Ready states that projects shall meet the current CALGreen Tier 2 standards, except all electric vehicle capable spaces shall instead be electric vehicle ready. For a project with 39 parking spaces, this would mean having 17 parking spaces that are electric vehicle ready with Level 2 chargers installed. Level 2 chargers take approximately four to ten hours to charge an electric vehicle (U.S. Department of Transportation 2023). Thus, these types of chargers are more appropriate for office or home uses (where a vehicle would be parked for four or more hours) and would be assumed to be able to charge one vehicle per day at a site that involves self-storage and convenience store uses. The project, as currently designed, would be capable of charging six EV vehicles at once using three Level 3 charging machines with the ability to charge two cars each. Level 3 chargers are capable of charging an electric vehicle within 20 minutes to one hour (U.S. Department of Transportation 2023), which would be in line with the lengths of a visit for self-storage and convenience store uses. Therefore, each charging spot is assumed to charge three vehicles per day. Seventeen Level 2 chargers assumed to charge one vehicle per day would result in GHG emission reductions of 195 MT CO₂e per year (see Appendix A). Six spots being charged by

three Level 3 chargers assumed to charge three vehicles per day would result in GHG emission reductions of 206 MT CO₂e per year (see Appendix A). Therefore, the project implementing six spots capable of being charged by Level 3 chargers is considered equivalent to the BMP 2 requirement of 17 spots being charged by Level 2 chargers.

GHG emissions with the implementation of BMP 1 and equivalent implementation of BMP 2 are shown in Table 9. As shown in the table, annual operational emissions generated by the proposed project would total approximately 1,084 MT CO₂e per year, which would not exceed the SMAQMD operational GHG emissions threshold of 1,100 MT CO₂e per year. Therefore, GHG impacts would be less than significant.

Table 9 Operational Emissions

Emission Source	Annual Emissions (MT CO ₂ e)
Operational	
Mobile	1,084
<i>EV Chargers</i>	-206
Area	2
Energy	60
Water	18
Waste	26
Refrigerants	100
Total	1,084
SMAQMD Operational Threshold	1,100
Exceed Threshold?	No
MT CO ₂ e = metric tons of carbon dioxide equivalent	
Source: Appendix A	

Threshold 2: Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

IMPACT GHG-2 THE PROPOSED PROJECT WOULD NOT CONFLICT WITH THE 2022 SCOPING PLAN OR THE SCAG 2020-2045 RTP/SCS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Consistency with Applicable Plans and Policies

2022 Scoping Plan

The principal state plans and policies are AB 32, the California Global Warming Solutions Act of 2006, and the subsequent legislation, SB 32 and AB 1279. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. The goal of SB 32 is to reduce GHG emissions to 40 percent below 1990 levels by 2030. In 2022, the State passed AB 1279, which declares the State would achieve net-zero GHG emissions by 2045 and would reduce GHG emissions by 85 percent below 1990 levels by 2045. The latest iteration of the Scoping Plan is the 2022 Scoping Plan, which focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the state's long-term climate

objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities. The 2022 Scoping Plan's strategies that apply to the proposed Project include reducing fossil fuel use, energy demand and VMT, and implementing building decarbonization.

The proposed project would be consistent with these goals through project design, which includes complying with the latest Title 24 Green Building Code and Building Efficiency Energy Standards. The project would not include natural gas, thus contributing to building decarbonization. In general, a gas station use is planned to satisfy existing vehicle transportation demand and is inherently not oriented for sustainable transportation uses such as transit or rail, however, the project does have VMT-reducing features to contribute its fair share, such as one vanpool space and six EV-ready spaces that would allow a reduction in vehicle miles, that would have the effect of reducing GHG emissions. Therefore, the proposed project will not conflict with the 2022 Scoping Plan.

Sacramento County Climate Action Plan

Sacramento County is in the process of adopting its Final CAP. The CAP provides guidance for the County's ongoing efforts to reduce GHG emissions. The CAP contains policies related to agriculture, energy, transportation/land use, waste, and water. Goals in the section on energy focus on increasing energy efficiency and increasing the usage of renewable sources. Actions include implementing green building ordinances and programs, community outreach, renewable energy policies, and partnerships with local energy producers. Goals in the section on transportation/land use cover a wide range of topics but are principally related to reductions in vehicle miles traveled, usage of alternative fuel types, and increases in vehicle efficiency. Actions include programs to increase the efficiency of the Sacramento County vehicle fleet, and an emphasis on mixed use and higher density development, implementation of technologies and planning strategies that improve nonvehicular mobility.

The proposed project would be consistent with these goals through project design, which includes complying with the latest Title 24 Green Building Code and Building Efficiency Energy Standards. The project would not include natural gas, thus contributing to reducing GHG emissions. In general, a gas station use is planned to satisfy existing vehicle transportation demand and is inherently not oriented for sustainable transportation uses such as transit or rail, however, the project does have VMT-reducing features to contribute its fair share, such as one vanpool space and six EV-ready spaces that would allow a reduction in vehicle miles, that would have the effect of reducing GHG emissions. Therefore, the proposed project will not conflict with the Sacramento County CAP.

6 References

- Association of Environmental Professionals (AEP). 2016. Final White Paper Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California. October. https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf
- California Air Pollution Control Officers Association (CAPCOA). 2008. CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA). January. <http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf> (accessed September 2021).
- California Air Resources Board (CARB). 2005. Air Quality and Land Use Handbook: A Community Health Perspective. <https://www.arb.ca.gov/ch/handbook.pdf>
- _____. 2016. Ambient Air Quality Standards. Last modified: May 4, 2016. <http://www.arb.ca.gov/research/aaqs/aaqs2.pdf>
- _____. 2017. California's 2017 Climate Change Scoping Plan. December 14, 2017. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf
- _____. 2020. "Current California Greenhouse Gas Emission Inventory – 2000-2018 GHG Inventory (2020 Edition)." <https://ww2.arb.ca.gov/ghg-inventory-data>
- _____. 2022. 2022 Scoping Plan for Achieving Carbon Neutrality. November 16, 2022. <https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf>
- _____. 2023a. "National Ambient Air Quality Standards." <https://ww2.arb.ca.gov/resources/national-ambient-air-quality-standards> (accessed June 2023).
- _____. 2023b. "California Ambient Air Quality Standards." <https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards> (accessed June 2023).
- _____. 2024. "Top 4 Summary: Select Pollutant, Years, & Area." <http://www.arb.ca.gov/adam/topfour/topfour1.php>
- California Climate Change Center (CCCC). 2006. Climate Scenarios for California. <https://research.fit.edu/media/site-specific/researchfitedu/coast-climate-adaptation-library/united-states/west-coast-amp-hawaix27i/california---statewide/CCCC.--2006.--Climate-Scenarios-for-California.pdf>
- California Department of Food and Agriculture. 2020. "California Agricultural Production Statistics." <https://www.cdfa.ca.gov/statistics/>
- California Department of Water Resources. 2018. Indicators of Climate Change in California. May 2018. <https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf>
- California Natural Resources Agency. 2009. 2009 California Climate Adaptation Strategy. March 2009. http://resources.ca.gov/docs/climate/Statewide_Adaptation_Strategy.pdf

- Forster, P., V. Ramaswamy, P. Artaxo, T. Berntsen, R. Betts, D.W. Fahey, J. Haywood, J. Lean, D.C. Lowe, G. Myhre, J. Nganga, R. Prinn, G. Raga, M. Schulz and R. Van Dorland. 2007. Changes in Atmospheric Constituents and in Radiative Forcing. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
<https://www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg1-chapter2-1.pdf>
- Intergovernmental Panel on Climate Change (IPCC). 2014a. Climate Change 2014: Mitigation of Climate Change. Summary for Policymakers - Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
- _____. 2014b. Climate Change 2014 Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland.
- _____. 2018. Summary for Policymakers. In: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.
<https://www.ipcc.ch/sr15/>
- Iowa Environmental Mesonet. 2023. Lincoln Station.
https://mesonet.agron.iastate.edu/sites/windrose.phtml?station=LHM&network=CA_ASOS
- National Aeronautics and Space Administration. 2020. “Global Climate Change – Vital Signs of the Planet – Sea Level.” <https://climate.nasa.gov/vital-signs/sea-level/>
- National Highway Traffic Safety Administration. 2020. “Fact Sheet: SAFE Vehicles Rule.”
<https://www.nhtsa.gov/corporate-average-fuel-economy/safe-fact-sheet>
- National Oceanic and Atmospheric Administration. 2020. “Global Climate Report for Annual 2019.” State of the Climate. January 2020. <https://www.ncdc.noaa.gov/sotc/global/201813>
- Parmesan, C. 2006. Ecological and Evolutionary Responses to Recent Climate Change. August.
- Sacramento Area Council of Governments. 2020. 2020 MTP/SCS. Available at:
<https://www.sacog.org/planning/blueprint/2020-mtp-scs/-folder-16>
- Sacramento Metropolitan Air Quality Management District. 2020a. SMAQMD Thresholds of Significance Table. Available at:
<https://www.airquality.org/LandUseTransportation/Documents/CH2ThresholdsTable4-2020.pdf>
- _____. 2020b. Greenhouse Gas Thresholds for Sacramento County. June 1. Available at:
<https://www.airquality.org/LandUseTransportation/Documents/SMAQMDGHGThresholds2020-03-04v2.pdf>
- _____. 2020c. SMAQMD Greenhouse Gas Thresholds/Best Management Practices Applicability. September 23. Available at:
<https://www.airquality.org/LandUseTransportation/Documents/Ch6GHGBMPApplicabilityFlowChart9-23-2020.pdf>

- _____. 2021. Guide to Air Quality Assessment in Sacramento County. April 2021. Available at:
<https://www.airquality.org/LandUseTransportation/Documents/TitleTOCFINAL2-2021.pdf>
- South Coast Air Quality Management District (SCAQMD). 2008. Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold. Available at:
[https://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-\(ghg\)-ceqa-significance-thresholds/ghgattachmente.pdf](https://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf)
- State of California. 2018. California’s Fourth Climate Change Assessment Statewide Summary Report. August 27, 2018. <http://www.climateassessment.ca.gov/state/>
- U.S. Department of Transportation. 2023. Charger Types and Speeds.
<https://www.transportation.gov/rural/ev/toolkit/ev-basics/charging-speeds#:~:text=Level%20,PHEV%20in%201%2D2%20hours.>
- U.S. Environmental Protection Agency (USEPA). N.d. Benzene.
<https://www.epa.gov/sites/production/files/2016-09/documents/benzene.pdf>
- _____. 2013. Policy Assessment for the Review of the Lead National Ambient Air Quality Standards, External Review Draft. https://www3.epa.gov/ttn/naaqs/standards/pb/data/010913_pb-draft-pa.pdf
- _____. 2016. “NAAQS Table.” <https://www.epa.gov/criteria-air-pollutants/naaqs-table>
- _____. 2020a. “Criteria Air Pollutants.” <https://www.epa.gov/criteria-air-pollutants>
- _____. 2020b. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2018. U. S. EPA #430-R-20-002. April 2020. <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2018>
- World Meteorological Organization. 2013. A summary of current and climate change findings and figures: a WMO information note. March 2013.
https://library.wmo.int/opac/index.php?lvl=notice_display&id=15892#.Wt9-Z8gvzIU
- _____. 2020. “Greenhouse Gases.” <https://public.wmo.int/en/our-mandate/focus-areas/environment/greenhouse%20gases>

Appendix A

Model Outputs

B.P. Fueling Station Detailed Report

Table of Contents

- 1. Basic Project Information
 - 1.1. Basic Project Information
 - 1.2. Land Use Types
 - 1.3. User-Selected Emission Reduction Measures by Emissions Sector
- 2. Emissions Summary
 - 2.1. Construction Emissions Compared Against Thresholds
 - 2.2. Construction Emissions by Year, Unmitigated
 - 2.4. Operations Emissions Compared Against Thresholds
 - 2.5. Operations Emissions by Sector, Unmitigated
- 3. Construction Emissions Details
 - 3.1. Site Preparation (2025) - Unmitigated
 - 3.3. Grading (2025) - Unmitigated
 - 3.5. Building Construction (2025) - Unmitigated
 - 3.7. Paving (2025) - Unmitigated

3.9. Architectural Coating (2025) - Unmitigated

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	B.P. Fueling Station
Construction Start Date	1/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.50
Precipitation (days)	23.6
Location	8695 Greenback Ln, Orangevale, CA 95662, USA
County	Sacramento
City	Unincorporated
Air District	Sacramento Metropolitan AQMD
Air Basin	Sacramento Valley
TAZ	606
EDFZ	13
Electric Utility	Sacramento Municipal Utility District
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.22

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
------------------	------	------	-------------	-----------------------	------------------------	--------------------------------	------------	-------------

Convenience Market with Gas Pumps	2.90	1000sqft	0.07	2,900	7,006	—	—	—
Unrefrigerated Warehouse-No Rail	80.2	1000sqft	1.84	80,200	0.00	—	—	—
Parking Lot	39.0	Space	0.35	0.00	0.00	—	—	—

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.	1.69	1.40	11.4	14.2	0.03	0.41	0.45	0.86	0.38	0.11	0.49	—	2,988	2,988	0.12	0.09	2.53	3,020
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.84	58.4	14.1	15.0	0.03	0.64	7.18	7.83	0.59	3.45	4.04	—	2,944	2,944	0.12	0.09	0.07	2,974
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.98	2.41	6.69	8.01	0.01	0.24	0.34	0.58	0.22	0.10	0.32	—	1,705	1,705	0.07	0.05	0.61	1,723
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.18	0.44	1.22	1.46	< 0.005	0.04	0.06	0.11	0.04	0.02	0.06	—	282	282	0.01	0.01	0.10	285

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.69	1.40	11.4	14.2	0.03	0.41	0.45	0.86	0.38	0.11	0.49	—	2,988	2,988	0.12	0.09	2.53	3,020
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.84	58.4	14.1	15.0	0.03	0.64	7.18	7.83	0.59	3.45	4.04	—	2,944	2,944	0.12	0.09	0.07	2,974
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.98	2.41	6.69	8.01	0.01	0.24	0.34	0.58	0.22	0.10	0.32	—	1,705	1,705	0.07	0.05	0.61	1,723
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.18	0.44	1.22	1.46	< 0.005	0.04	0.06	0.11	0.04	0.02	0.06	—	282	282	0.01	0.01	0.10	285

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.	9.53	10.8	6.78	69.8	0.14	0.11	11.8	11.9	0.10	3.00	3.10	85.4	14,852	14,938	5.34	0.69	651	15,929
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	8.04	9.28	7.93	57.1	0.13	0.11	11.8	11.9	0.10	3.00	3.10	85.4	13,598	13,683	5.43	0.75	603	14,646
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.30	8.81	4.39	35.8	0.06	0.06	5.38	5.43	0.05	1.37	1.42	85.4	6,825	6,911	5.18	0.46	611	7,789

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.33	1.61	0.80	6.53	0.01	0.01	0.98	0.99	0.01	0.25	0.26	14.1	1,130	1,144	0.86	0.08	101	1,290

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	8.89	8.23	6.75	66.2	0.14	0.11	11.8	11.9	0.10	3.00	3.10	—	14,435	14,435	0.65	0.60	49.7	14,681
Area	0.64	2.53	0.03	3.61	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	14.9	14.9	< 0.005	< 0.005	—	14.9
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	363	363	0.02	< 0.005	—	365
Water	—	—	—	—	—	—	—	—	—	—	—	40.1	38.9	79.0	0.14	0.09	—	109
Waste	—	—	—	—	—	—	—	—	—	—	—	45.3	0.00	45.3	4.53	0.00	—	159
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	601	601
Total	9.53	10.8	6.78	69.8	0.14	0.11	11.8	11.9	0.10	3.00	3.10	85.4	14,852	14,938	5.34	0.69	651	15,929
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	8.04	7.34	7.93	57.1	0.13	0.11	11.8	11.9	0.10	3.00	3.10	—	13,195	13,195	0.74	0.66	1.29	13,413
Area	—	1.94	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	363	363	0.02	< 0.005	—	365
Water	—	—	—	—	—	—	—	—	—	—	—	40.1	38.9	79.0	0.14	0.09	—	109
Waste	—	—	—	—	—	—	—	—	—	—	—	45.3	0.00	45.3	4.53	0.00	—	159
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	601	601
Total	8.04	9.28	7.93	57.1	0.13	0.11	11.8	11.9	0.10	3.00	3.10	85.4	13,598	13,683	5.43	0.75	603	14,646
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	6.86	6.47	4.37	33.3	0.06	0.05	5.38	5.43	0.05	1.37	1.42	—	6,413	6,413	0.49	0.37	9.93	6,546
Area	0.44	2.35	0.02	2.48	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.2	10.2	< 0.005	< 0.005	—	10.2
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	363	363	0.02	< 0.005	—	365
Water	—	—	—	—	—	—	—	—	—	—	—	40.1	38.9	79.0	0.14	0.09	—	109
Waste	—	—	—	—	—	—	—	—	—	—	—	45.3	0.00	45.3	4.53	0.00	—	159
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	601	601
Total	7.30	8.81	4.39	35.8	0.06	0.06	5.38	5.43	0.05	1.37	1.42	85.4	6,825	6,911	5.18	0.46	611	7,789
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.25	1.18	0.80	6.08	0.01	0.01	0.98	0.99	0.01	0.25	0.26	—	1,062	1,062	0.08	0.06	1.64	1,084
Area	0.08	0.43	< 0.005	0.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.69	1.69	< 0.005	< 0.005	—	1.69
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	60.2	60.2	< 0.005	< 0.005	—	60.4
Water	—	—	—	—	—	—	—	—	—	—	—	6.64	6.44	13.1	0.02	0.01	—	18.0
Waste	—	—	—	—	—	—	—	—	—	—	—	7.50	0.00	7.50	0.75	0.00	—	26.3
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	99.5	99.5
Total	1.33	1.61	0.80	6.53	0.01	0.01	0.98	0.99	0.01	0.25	0.26	14.1	1,130	1,144	0.86	0.08	101	1,290

3. Construction Emissions Details

3.1. Site Preparation (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.42	1.19	10.9	11.0	0.03	0.47	—	0.47	0.43	—	0.43	—	2,717	2,717	0.11	0.02	—	2,726
Dust From Material Movement	—	—	—	—	—	—	1.59	1.59	—	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.9	14.9	< 0.005	< 0.005	—	14.9
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	—	2.46	2.46	< 0.005	< 0.005	—	2.47
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
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	0.03	0.03	0.03	0.33	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	75.6	75.6	< 0.005	< 0.005	0.01	76.5

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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.43	0.43	< 0.005	< 0.005	< 0.005	0.43
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.07	0.07	< 0.005	< 0.005	< 0.005	0.07
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

3.3. Grading (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.80	1.51	14.1	14.5	0.02	0.64	—	0.64	0.59	—	0.59	—	2,455	2,455	0.10	0.02	—	2,463
Dust From Material Movement	—	—	—	—	—	—	7.08	7.08	—	3.42	3.42	—	—	—	—	—	—	—
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	0.02	0.02	0.15	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.9	26.9	< 0.005	< 0.005	—	27.0
Dust From Material Movement	—	—	—	—	—	—	0.08	0.08	—	0.04	0.04	—	—	—	—	—	—	—
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	0.03	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.45	4.45	< 0.005	< 0.005	—	4.47
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	0.01	0.01	—	—	—	—	—	—	—
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.01	102
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.13	1.13	< 0.005	< 0.005	< 0.005	1.15
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.19
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

3.5. 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	1.49	1.24	10.6	11.9	0.02	0.40	—	0.40	0.37	—	0.37	—	2,201	2,201	0.09	0.02	—	2,209
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	1.49	1.24	10.6	11.9	0.02	0.40	—	0.40	0.37	—	0.37	—	2,201	2,201	0.09	0.02	—	2,209
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	0.81	0.68	5.81	6.50	0.01	0.22	—	0.22	0.20	—	0.20	—	1,206	1,206	0.05	0.01	—	1,210
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	0.15	0.12	1.06	1.19	< 0.005	0.04	—	0.04	0.04	—	0.04	—	200	200	0.01	< 0.005	—	200
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	0.16	0.15	0.10	2.09	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	393	393	0.01	0.01	1.51	399
Vendor	0.04	0.02	0.71	0.27	< 0.005	0.01	0.10	0.11	0.01	0.03	0.03	—	394	394	0.03	0.06	1.02	413
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	0.15	0.13	0.13	1.54	0.00	0.00	0.35	0.35	0.00	0.08	0.08	—	349	349	0.01	0.01	0.04	353
Vendor	0.04	0.01	0.76	0.27	< 0.005	0.01	0.10	0.11	0.01	0.03	0.03	—	394	394	0.03	0.06	0.03	412
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	0.08	0.07	0.06	0.86	0.00	0.00	0.19	0.19	0.00	0.04	0.04	—	196	196	< 0.005	0.01	0.36	199
Vendor	0.02	0.01	0.41	0.15	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	216	216	0.01	0.03	0.24	226
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	0.01	0.16	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	32.5	32.5	< 0.005	< 0.005	0.06	32.9
Vendor	< 0.005	< 0.005	0.08	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.7	35.7	< 0.005	0.01	0.04	37.4
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

3.7. Paving (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.83	0.70	6.13	8.21	0.01	0.27	—	0.27	0.25	—	0.25	—	1,244	1,244	0.05	0.01	—	1,248
Paving	—	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.17	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.1	34.1	< 0.005	< 0.005	—	34.2
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.03	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.64	5.64	< 0.005	< 0.005	—	5.66
Paving	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.06	0.06	0.06	0.67	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	151	151	< 0.005	0.01	0.02	153

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	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.25	4.25	< 0.005	< 0.005	0.01	4.31
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.70	0.70	< 0.005	< 0.005	< 0.005	0.71
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

3.9. Architectural Coating (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architect ural Coatings	—	58.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	< 0.005	< 0.005	0.02	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.66	3.66	< 0.005	< 0.005	—	3.67
Architectural Coatings	—	1.59	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Architectural Coatings	—	0.29	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.03	0.03	0.03	0.31	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	69.8	69.8	< 0.005	< 0.005	0.01	70.6
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	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.96	1.96	< 0.005	< 0.005	< 0.005	1.99
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	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.32	0.32	< 0.005	< 0.005	< 0.005	0.33

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	8.35	7.73	6.34	62.2	0.13	0.10	11.1	11.2	0.09	2.82	2.91	—	13,564	13,564	0.61	0.57	46.7	13,795
Unrefrigerated Warehouse-No Rail	0.54	0.50	0.41	3.99	0.01	0.01	0.71	0.72	0.01	0.18	0.19	—	871	871	0.04	0.04	3.00	886
Parking Lot	0.00	0.00	0.00	0.00	0.00	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	8.89	8.23	6.75	66.2	0.14	0.11	11.8	11.9	0.10	3.00	3.10	—	14,435	14,435	0.65	0.60	49.7	14,681
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Convenience Market with Gas Pumps	7.55	6.90	7.45	53.6	0.12	0.10	11.1	11.2	0.09	2.82	2.91	—	12,399	12,399	0.70	0.62	1.21	12,604
Unrefrigerated Warehouse-No Rail	0.49	0.44	0.48	3.45	0.01	0.01	0.71	0.72	0.01	0.18	0.19	—	797	797	0.04	0.04	0.08	810
Parking Lot	0.00	0.00	0.00	0.00	0.00	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	8.04	7.34	7.93	57.1	0.13	0.11	11.8	11.9	0.10	3.00	3.10	—	13,195	13,195	0.74	0.66	1.29	13,413
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	1.16	1.10	0.72	5.47	0.01	0.01	0.85	0.86	0.01	0.22	0.22	—	927	927	0.07	0.05	1.43	947
Unrefrigerated Warehouse-No Rail	0.09	0.08	0.08	0.61	< 0.005	< 0.005	0.13	0.13	< 0.005	0.03	0.03	—	134	134	0.01	0.01	0.21	137
Parking Lot	0.00	0.00	0.00	0.00	0.00	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	1.25	1.18	0.80	6.08	0.01	0.01	0.98	0.99	0.01	0.25	0.26	—	1,062	1,062	0.08	0.06	1.64	1,084

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	—	30.7	30.7	< 0.005	< 0.005	—	30.8
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	323	323	0.01	< 0.005	—	323
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	10.2	10.2	< 0.005	< 0.005	—	10.3
Total	—	—	—	—	—	—	—	—	—	—	—	—	363	363	0.02	< 0.005	—	365
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	—	30.7	30.7	< 0.005	< 0.005	—	30.8
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	323	323	0.01	< 0.005	—	323
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	10.2	10.2	< 0.005	< 0.005	—	10.3
Total	—	—	—	—	—	—	—	—	—	—	—	—	363	363	0.02	< 0.005	—	365
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	—	5.09	5.09	< 0.005	< 0.005	—	5.10
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	53.4	53.4	< 0.005	< 0.005	—	53.6
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	—	1.69	1.69	< 0.005	< 0.005	—	1.70
Total	—	—	—	—	—	—	—	—	—	—	—	—	60.2	60.2	< 0.005	< 0.005	—	60.4

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Parking Lot	0.00	0.00	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

4.3.1. 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	—	1.78	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.64	0.59	0.03	3.61	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	14.9	14.9	< 0.005	< 0.005	—	14.9
Total	0.64	2.53	0.03	3.61	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	14.9	14.9	< 0.005	< 0.005	—	14.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	1.78	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	1.94	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.08	0.07	< 0.005	0.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.69	1.69	< 0.005	< 0.005	—	1.69

Total	0.08	0.43	< 0.005	0.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.69	1.69	< 0.005	< 0.005	—	1.69
-------	------	------	---------	------	---------	---------	---	---------	---------	---	---------	---	------	------	---------	---------	---	------

4.4. Water Emissions by Land Use

4.4.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	0.46	0.56	1.02	< 0.005	< 0.005	—	1.36
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	39.6	38.3	78.0	0.14	0.09	—	107
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	40.1	38.9	79.0	0.14	0.09	—	109
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	0.46	0.56	1.02	< 0.005	< 0.005	—	1.36

Unrefrige rated Warehou se-No	—	—	—	—	—	—	—	—	—	—	—	39.6	38.3	78.0	0.14	0.09	—	107
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	40.1	38.9	79.0	0.14	0.09	—	109
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenie nce Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	0.08	0.09	0.17	< 0.005	< 0.005	—	0.23
Unrefrige rated Warehou se-No Rail	—	—	—	—	—	—	—	—	—	—	—	6.56	6.35	12.9	0.02	0.01	—	17.8
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	6.64	6.44	13.1	0.02	0.01	—	18.0

4.5. Waste Emissions by Land Use

4.5.1. 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	4.70	0.00	4.70	0.47	0.00	—	16.4
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	40.6	0.00	40.6	4.06	0.00	—	142
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	45.3	0.00	45.3	4.53	0.00	—	159
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	4.70	0.00	4.70	0.47	0.00	—	16.4
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	40.6	0.00	40.6	4.06	0.00	—	142
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	45.3	0.00	45.3	4.53	0.00	—	159
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	0.78	0.00	0.78	0.08	0.00	—	2.72

Unrefrigerated Warehouse Rail	—	—	—	—	—	—	—	—	—	—	—	6.73	0.00	6.73	0.67	0.00	—	23.5
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	7.50	0.00	7.50	0.75	0.00	—	26.3

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	601	601
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	601	601
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convenience Market with Gas Pumps	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	601	601
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	601	601
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Convenience	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	99.5	99.5
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	99.5	99.5

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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

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)

Vegetatio	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
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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Site Preparation	Site Preparation	1/30/2025	2/1/2025	5.00	2.00	—
Grading	Grading	2/2/2025	2/7/2025	5.00	4.00	—
Building Construction	Building Construction	2/8/2025	11/15/2025	5.00	200	—
Paving	Paving	11/16/2025	11/30/2025	5.00	10.0	—
Architectural Coating	Architectural Coating	12/1/2025	12/15/2025	5.00	10.0	—

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
Site Preparation	Graders	Diesel	Average	1.00	8.00	148	0.41
Site Preparation	Tractors/Loaders/Backh oes	Diesel	Average	1.00	7.00	84.0	0.37
Site Preparation	Scrapers	Diesel	Average	1.00	8.00	423	0.48
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backh oes	Diesel	Average	2.00	7.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29

Building Construction	Forklifts	Diesel	Average	2.00	7.00	82.0	0.20
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	6.00	84.0	0.37
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Welders	Diesel	Average	3.00	8.00	46.0	0.45
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	1.00	8.00	10.0	0.56
Paving	Pavers	Diesel	Average	1.00	8.00	81.0	0.42
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	7.50	14.3	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.80	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	10.0	14.3	LDA,LDT1,LDT2
Grading	Vendor	—	8.80	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT

Building Construction	—	—	—	—
Building Construction	Worker	34.6	14.3	LDA,LDT1,LDT2
Building Construction	Vendor	13.6	8.80	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	14.3	LDA,LDT1,LDT2
Paving	Vendor	—	8.80	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	6.92	14.3	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.80	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	124,650	41,550	917

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	3.00	0.00	—
Grading	—	—	4.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.35

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Convenience Market with Gas Pumps	0.00	0%
Unrefrigerated Warehouse-No Rail	0.00	0%
Parking Lot	0.35	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	375	0.01	< 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
Convenience Market with Gas Pumps	1,810	1,810	1,810	660,716	3,113	15,637	15,637	2,442,339

Unrefrigerated Warehouse-No Rail	116	116	116	42,446	1,005	1,005	1,005	366,659
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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	124,650	41,550	917

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	250

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)
Convenience Market with Gas Pumps	40,183	279	0.0129	0.0017	0.00
Unrefrigerated Warehouse-No Rail	421,911	279	0.0129	0.0017	0.00

Parking Lot	13,394	279	0.0129	0.0017	0.00
-------------	--------	-----	--------	--------	------

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Convenience Market with Gas Pumps	214,810	97,848
Unrefrigerated Warehouse-No Rail	18,546,250	0.00
Parking Lot	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Convenience Market with Gas Pumps	8.72	—
Unrefrigerated Warehouse-No Rail	75.4	—
Parking Lot	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
Convenience Market with Gas Pumps	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Convenience Market with Gas Pumps	Supermarket refrigeration and condensing units	R-404A	3,922	26.5	16.5	16.5	18.0

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
----------------	-----------	-------------	----------------	---------------	------------	-------------

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
----------------	-----------	----------------	---------------	----------------	------------	-------------

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)
----------------	-----------	--------	--------------------------	------------------------------	------------------------------

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
--------------------------	----------------------	---------------	-------------

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres
--------------------	---------------	-------------

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)
-----------	--------	------------------------------	------------------------------

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	25.9	annual days of extreme heat
Extreme Precipitation	5.80	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	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 (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

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	3	0	0	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	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	3	1	1	3
Extreme Precipitation	2	1	1	3
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

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	66.8
AQ-PM	15.4
AQ-DPM	20.7
Drinking Water	5.17
Lead Risk Housing	46.8
Pesticides	32.9
Toxic Releases	14.9
Traffic	20.8
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	7.35
Impaired Water Bodies	0.00
Solid Waste	0.00
Sensitive Population	—
Asthma	70.7
Cardio-vascular	78.7
Low Birth Weights	3.61
Socioeconomic Factor Indicators	—

Education	31.7
Housing	49.7
Linguistic	8.49
Poverty	41.2
Unemployment	75.4

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	55.10073143
Employed	55.84498909
Median HI	60.56717567
Education	—
Bachelor's or higher	45.73335044
High school enrollment	2.1429488
Preschool enrollment	1.873476197
Transportation	—
Auto Access	44.50147568
Active commuting	21.22417554
Social	—
2-parent households	1.83498011
Voting	86.89849865
Neighborhood	—
Alcohol availability	77.33863724
Park access	25.20210445
Retail density	23.77774926

Supermarket access	31.55395868
Tree canopy	92.1852945
Housing	—
Homeownership	81.57320672
Housing habitability	45.47670987
Low-inc homeowner severe housing cost burden	37.41819582
Low-inc renter severe housing cost burden	7.737713332
Uncrowded housing	78.31387142
Health Outcomes	—
Insured adults	55.78082895
Arthritis	0.0
Asthma ER Admissions	55.4
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	33.1
Cognitively Disabled	35.0
Physically Disabled	11.3
Heart Attack ER Admissions	30.6
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	49.9
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	0.0
Children	95.8
Elderly	12.2
English Speaking	82.2
Foreign-born	4.9
Outdoor Workers	36.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	86.6
Traffic Density	61.3
Traffic Access	23.0
Other Indices	—
Hardship	44.0
Other Decision Support	—
2016 Voting	83.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	16.0
Healthy Places Index Score for Project Location (b)	31.0
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
Operations: Energy Use	No natural gas
Construction: Demolition	—
Construction: Construction Phases	No demo
Operations: Vehicle Data	Trip test

B.P. Fueling Station/Mini-Storage
GHG Emissions Reductions from Charging Stations (17)

Estimated GHG Emissions Reductions to replace gasoline vehicles with Electric Vehicles

	Passenger Vehicle		<u>Conversion Factors:</u>
	B.P. Fueling Station/Mini-Storage		
Project Electricity Emission Factor ¹	0.13	MTCO ₂ e/MWh	2204.62 lb/MT
Electric Vehicle Fuel Economy ²	0.25	kWh/mile	1.00E-06 MT/gram
Gasoline CO ₂ e Emissions while Running ³	283	gr/mile	0.001 MWh to KWh
Annual VMT Reduction per charging Station ⁴	45,625	miles/charging station/year)	
Number of Chargers ⁵	17		
Annual VMT Reduction All Stations (based on Charge)	775,625		

Estimated Benefit from Installing Electric Vehicle Charging Stations.

	B.P. Fueling Station/Mini-Storage	
GHG Emissions of Gasoline vehicles	219	MTCO ₂ e/yr
GHG Emissions of Electric Vehicles	24	MTCO ₂ e/yr
Net Reduction in Emissions	195.22	MTCO ₂ e/yr
Emissions/station	11.48325905	

Notes:

¹ CO₂e intensity factor of lb/MWh is consistent with previous project CalEEMod runs. (**Utility Information section in CalEEMod for project operational year factor**)

B.P. Fueling Station/Mini-Storage

276.00

² Obtained from National Renewable Energy Laboratory (NREL), 2018. California Plug-In Electric Vehicle Infrastructure

³ Obtained emission factor from EMFAC 2021 Emissions Rates for MTC. CO₂ gr/mile for LDA

B.P. Fueling Station/Mini-Storage

282.9857804

⁴ Annual VMT reduction estimated based on an estimate of five hours of charge time for a Level 2 charging station that charges at a rate of 25 driving range per hour.

⁵ Number of charging stations

B.P. Fueling Station/Mini-Storage
GHG Emissions Reductions from Charging Stations (6 Level 3 Spots)

Estimated GHG Emissions Reductions to replace gasoline vehicles with Electric Vehicles

	B.P. Fueling Station/Mini-Storage		Passenger Vehicle	<u>Conversion Factors:</u>
Project Electricity Emission Factor ¹	0.13	MTCO ₂ e/MWh		2204.62 lb/MT
Electric Vehicle Fuel Economy ²	0.25	kWh/mile		1.00E-06 MT/gram
Gasoline CO ₂ e Emissions while Running ³	283	gr/mile		0.001 MWh to KWh
Annual VMT Reduction per charging Station ⁴	136,875	miles/charging station/year		
Number of Chargers ⁵	6			
Annual VMT Reduction All Stations (based on Charge)	821,250			

Estimated Benefit from Installing Electric Vehicle Charging Stations.

	B.P. Fueling Station/Mini-Storage	
GHG Emissions of Gasoline vehicles	232	MTCO ₂ e/yr
GHG Emissions of Electric Vehicles	26	MTCO ₂ e/yr
Net Reduction in Emissions	206.70	MTCO ₂ e/yr
Emissions/station	34.44977716	

Notes:

¹ CO₂e intensity factor of lb/MWh is consistent with previous project CalEEMod runs. (**Utility Information section in CalEEMod for project operational year factor**)

B.P. Fueling Station/Mini-Storage

276.00

² Obtained from National Renewable Energy Laboratory (NREL), 2018. California Plug-In Electric Vehicle Infrastructure

³ Obtained emission factor from EMFAC 2021 Emissions Rates for MTC. CO₂ gr/mile for LDA

B.P. Fueling Station/Mini-Storage

282.9857804

⁴ Annual VMT reduction estimated based on an estimate of three vehicles charged in a 24 hour period per charger (approx 20 min-1 hour charge time per car) for a Level 3 charging station.

⁵ Number of charging spots (6 charging spots from 3 Level 3 chargers)