# Appendix A

Air Quality and Greenhouse Gas Technical Report

# Zero Emissions Bus Charging and Maintenance Facility Project

## *Air Quality and Greenhouse Gas Technical Report*

**July 2025**

**Prepared for:**

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# 1.0 INTRODUCTION

This Air Quality/Greenhouse Gas Technical Report evaluates air quality and greenhouse gas impacts associated with the proposed Zero Emissions Charging and Maintenance Facility Project (Project), located at 1075 East Francisco Boulevard (Project Site) in the City of San Rafael (City). This report has been prepared by Impact Sciences, Inc., to support the Project's environmental documentation being prepared pursuant to the California Environmental Quality Act (CEQA). This analysis considers both the temporary air quality and greenhouse gas impacts from Project construction and long-term impacts associated with operation of the Project.

## 1.1 ENVIRONMENTAL SETTING

### Location

The Project Site is located in the City of San Rafael in eastern Marin County. The site consists of two parcels, generally bordered by Castro Avenue to the north, Francisco Boulevard East to the west, commercial and industrial private parcels to the south, and Kerner Boulevard to the east. The Project Site consists of two parcels identified by Assessor's Parcel Numbers (APN) 009-191-37 and 009-191-38. Interstate 580 (I-580) runs in a northwest-southeast orientation located adjacent to the west of Francisco Boulevard East (see **Figure 1, Aerial Photograph of the Project Site**).

### Existing Conditions

The Project Site is in a highly urbanized area surrounded by Light Industrial, General Commercial, and Commercial Mixed-use, Public/Quasi Public, and General Industrial land uses. The zoning designations surrounding the Project Site include Light Industrial/Office, General Commercial, Planned Development, and Open Space designations.

Under the City's General Plan, the Project Site has a Land Use Designation of Community Commercial Mixed Use. The Project Site has a Zoning designation of General Commercial in the San Rafael Municipal Code of Ordinances.

Typical uses allowed for sites under this General Plan land use designation include general retail and service uses, restaurants, automobile sales and service uses, hotels/ motels, and other commercial activities. Offices are also permitted, except where specifically precluded by General Plan policies. Mixed-use projects that combine housing and commercial uses are encouraged. Projects that are entirely residential are permitted, although limitations may apply in certain zoning districts to ensure that adequate land is provided for activities generating sales tax, jobs, and local service opportunities. Residential development

is subject to a maximum net density of 43.6 units per acre. The FAR limit of 0.3 applies to non-residential square footage only, and excludes square footage associated with housing in mixed-use projects.

The Zoning designation promotes a full range of retail and freeway or major street access and visibility. Residential use is allowed with a use permit. Offices are conditional secondary uses, for example, on portions of sites with poor retail visibility. Floor area ratio (FAR), trip allocation and design criteria vary throughout the district in response to specialized conditions recognized in the general plan.

## 1.2 PROJECT CHARACTERISTICS

### Project Features and Operations

As part of the Project, Marin Transit would develop the site with a new building dedicated to District operations, visitor, employee, and bus parking, maintenance, charging, and fencing. The Project will support both diesel and electric vehicles, so a diesel refueling station will be included to service diesel buses until the transition to an all-electric fleet. The facility will maintain the District's 68 buses used for fixed route service and 32 vehicles for demand response services and park approximately two thirds of the total fleet. These components are discussed in greater detail below.

#### *Building*

The Project would construct an 18,600 square-foot building not to exceed 36 feet in height (see **Figure 2, Site Plan**), located in the approximate middle of the site. The southern side of the building would be dedicated to office space, a cash safe, two shower rooms, two restrooms, a breakroom, and a manager's office. The northern side of the building would be dedicated to driver's check-in, employee lockers, breakroom, and utility rooms such as main electricity room, mechanical room, janitorial closet, copy room, and a Main Distribution Frame (MDF) room. Subsurface excavation of up to ten feet would occur to allow for the construction of the building foundation.

The bus facilities would be enclosed. The facilities would include five bus maintenance bays, storage for parts and tires, a bus washing station, fare exchange, and a vacuum island. The bus maintenance bays would be equipped with mobile lifts for easier access to the underside of fleet vehicles.

#### *External Bus Facilities*

The bus facilities area would be located between the proposed building and the employee/visitor parking on the southern portion of the site (See **Figure 2**). Along the northern building façade, there is a single above-ground 10,000-gallon diesel tank and associated fuel.

## *Site Access and Parking*

Access to the visitor, employee, and bus facilities area (parking/maintenance/charging/fueling lots) would be provided via four driveways, including one dedicated bus driveway along Castro Avenue on the northeast corner of the site, one visitor/employee driveway along Francisco Boulevard East, and two dedicated bus driveways along Francisco Boulevard East on the west side of the site (See Figure 5). The visitor parking lot would be accessible via the northeastern driveway and would provide up to 60 passenger parking spaces for employees and visitors. The project would provide up to 50 bus parking stalls being accessible via the Francisco Boulevard East driveway and would allow for both ingress and egress. The bus parking spaces would be dedicated to bus charging, with canopies possibly equipped with rooftop solar not to exceed 36 feet in height.

The City of San Rafael has begun a 2024-2025 Pavement Maintenance Project, which removes existing striping, places crack seal, slurry seal, and micro-surfacing along roadways, and installs new striping on various roadways in the City. This City project is being completed incrementally and is not expected to substantially inhibit access to the District's project site or adversely impact the District's project and its progress, just as the District's project is not expected to adversely affect the City's project.

## *Other Infrastructure, Equipment, and Utilities*

### Water

Water service would be provided by the Marin Municipal Water District. Before service is provided to the project site, Marin Municipal Water District must approve the appropriate water service improvements and connections permits.

### Wastewater

For areas south of Puerto Suello Hill, the San Rafael Sanitation District (SRSD) maintains and operates the City's sewer systems, which would provide sewer service for the project. Before sewer service would be provided to the project site, the appropriate sanitary sewer connection permits would be completed and approved.

### Electricity and Natural Gas

The infrastructure to provide electricity and natural gas service would be provided to the project site by Pacific Gas & Electric (PG&E) or Marin Clean Energy (MCE). Electrical improvements and

[1] City of San Rafael, 2024/25 Pavement Maintenance Project, October 1, 2024. Available online at: https://www.cityofsanrafael.org/2024-25-pavement-maintenance-project/, accessed July 28, 2025.

connection permits must be approved before service is provided to the site. Various locations throughout the site would have light fixtures constructed (i.e., outdoor lighting on building, light poles throughout project site). PG&E manages two underground electric lines in the project vicinity: a 115 kV north-south electric line and a 60 kV east-west electric line. Electric service to the project site would be provided by connections to these lines.

The project would require one generator that would be used only during an emergency scenario and critical building loads and would not be used for bus charging. The generator would be approximately 300 kilowatts and be located towards the southwest side of the building.

**Other Infrastructure**

The staff and visitor parking area would be fenced. Security cameras would be located throughout the project site focusing on the building and entrances and exits to the project site. Exterior lighting would be constructed at various points throughout the project site, and attached to the main building.

## *Stormwater Control and Landscaping*

Site layout will be reviewed and designed to comply with the "Stormwater Quality Manual for Development Projects in Marin County." The City of San Rafael is a participating city in the Marin County Stormwater Pollution Prevention Program (MCSTOPPP).

There is only one tree located on-site, which would be removed during construction and replaced with ornamental landscaping throughout the project site. Additionally, bioswales would be implemented to capture, treat, and infiltrate stormwater runoff.

## *Construction*

Construction staging and activities would occur entirely within the boundaries of the project site. Construction would occur Monday through Friday from 7:00 a.m. to 6:00 p.m., consistent with the City's permitted construction days and hours. Construction is expected to require approximately 18 to 24 months. There is existing soil surcharge on site associated with the prior plan to develop the project site as a hotel, and project construction would require the off-haul of approximately 17,000 cubic yards of soil. Equipment used for construction would include scrapers, blades, bulldozers, excavators, skid steers, loaders, concrete trucks, dump trucks, and a small crane. Public access to the project site during construction would be restricted, and materials would be stored and moved around on-site as needed. Construction of the project would require subsurface work extending to depths of up to 10 feet below grade. See below for additional details regarding construction.

### *Operation*

Upon the completion of construction, the zero emissions operations and maintenance facility would be used to charge and conduct routine maintenance and storage of the vehicle fleet. This routine maintenance would include, but is not limited to, general repairs, tire repairs, part replacements, refueling diesel-electric hybrid buses until they are phased out, and cleaning of the interior and exterior of the buses. The total number of buses is expected to be the same as existing but more consolidated rather than spread around various locations in Marin County. The highest number of users would be transit drivers and they would typically use the facility over a 23 hour period from 4:00 a.m. to 3:00 a.m

## 1.3 PROJECT CONSTRUCTION SEQUENCING

For the purpose of analyzing impacts associated with construction activities, this analysis assumes a construction schedule of approximately 18 to 24 months beginning in 2027. This analysis assumes the Project will be fully operational in 2029. It should be noted that the construction assumptions identified herein are conceptual and are intended to identify worst-case daily impacts. If the Project is built out more slowly and at later dates than those assumed herein, the daily construction intensity would be reduced and associated daily impacts would be generally reduced. Construction activities associated with the Project would involve: (1) site preparation/grading/foundation preparation, and (2) building construction.

The grading and site preparation phase would occur for approximately one month and would require the import of approximately 9,000 cubic yards of soil and an export of approximately 8,000 cubic yards of soil to accommodate the proposed subsurface work extending to depths of up to 10 feet below grade.

Building construction would occur for approximately 17 months and would include the construction of the proposed structure, connection of utilities, laying irrigation for landscaping, architectural coatings, paving and landscaping the Project Site. Paving and architectural coatings would take place concurrently during the final month of building construction.

As stated previously, equipment used throughout the construction process would generally include scrapers, blades, bulldozers, excavators, skid steers, loaders, concrete trucks, dump trucks, and a small crane. Consistent with CalEEMod methodology for a 3.5-acre site, the following maximum daily equipment on site by phase will be assumed.

- Site Preparation/Grading/Foundation Preparation: 1 scraper, 1 excavator, 1 rubber tired dozer, and 3 tractors/loaders/backhoes
- Building Construction: 1 crane, 3 forklifts, 1 generator set, 3 tractors/loaders/backhoes, 1 welder
- Paving: 2 cement and mortar mixers, 1 paver, 2 paving equipment, 2 rollers, 1 tractor/loader/backhoe
- Architectural Coating: 1 air compressor


**SOURCE:** Esri, 2025

FIGURE 1

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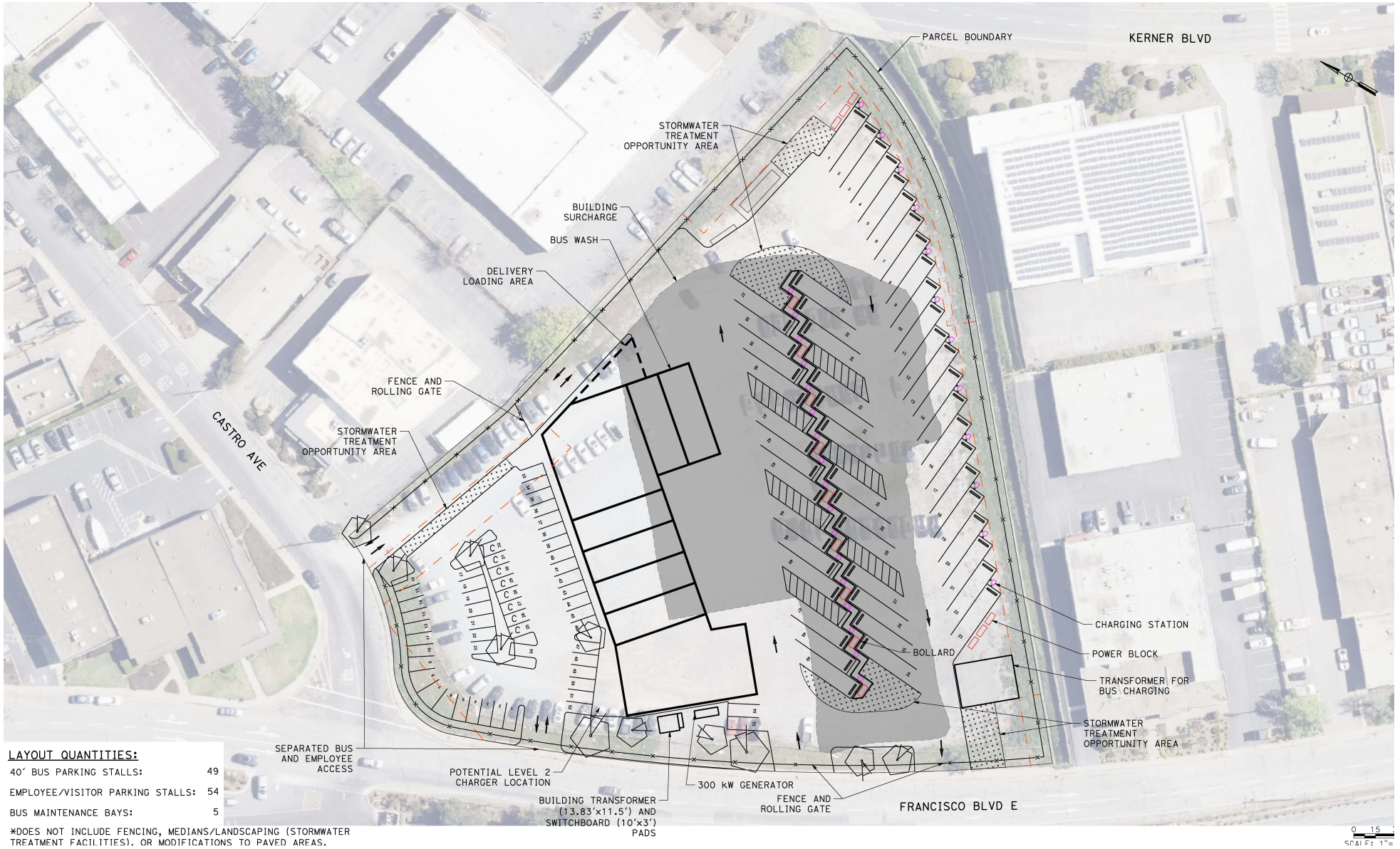
Aerial Photograph of the Project Site

1533.003•03/25




**SOURCE:** Mark Thomas, 2025

FIGURE **2**

# Project Site Plan

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1533.003•03/25

# 2.0 ENVIRONMENTAL SETTING

## 2.1 AIR QUALITY SETTING

### San Francisco Bay Area Air Basin

The Project Site is located within the San Francisco Bay Area Air Basin (SFBAAB or Basin). The SFBAAB encompasses all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties; the southern portion of Sonoma; and the southwestern portion of Solano County. 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.[2]

#### *Climate*

The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below to the surface because of the northwesterly flow produces a band of cold water off the California coast. The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold-water band resulting in condensation and the presence of fog and stratus clouds along the Northern California coast.

In the winter, the Pacific high-pressure cell weakens and shifts southward resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

#### *Topography*

The topography of the SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys and bays. This complex terrain, especially the higher elevations, distorts the normal wind flow patterns in the SFBAAB. The greatest distortion occurs when low-level inversions are present and the air beneath the inversion flows independently of air above the inversion, a condition that is common in the summertime.

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2 BAAD, *2022 CEQA Guidelines,* Adopted April 20, 2022. Available online at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed April 30, 2025.

### *Wind Patterns*

During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more directly from the west as they stream through the Golden Gate. This channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward Richmond and to the southwest toward San José when it meets the East Bay hills.

In the winter, the SFBAAB frequently experiences stormy conditions with moderate-to-strong winds, as well as periods of stagnation with very light winds. Winter stagnation episodes are characterized by drainage flows in coastal valleys. Drainage is a reversal of the usual daytime air-flow patterns; air moves from the Central Valley towards the coast and back down toward the Bay from the smaller valleys within the SFBAAB.

### *Temperature*

Summertime temperatures in the SFBAAB are determined in large part by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays. The temperature gradient near the ocean is also exaggerated, especially in summer, because of the upwelling of cold ocean bottom water along the coast. On summer afternoons the temperatures at the coast can be 35ºF cooler than temperatures 15 to 20 miles inland. At night, this contrast usually decreases to less than 10ºF.

In the winter, the relationship of minimum and maximum temperatures is reversed. During the daytime the temperature contrast between the coast and inland areas is small, whereas at night the variation in temperature is large.

### *Precipitation*

The SFBAAB is characterized by moderately wet winters and dry summers. Winter rains account for about 75 percent of the average annual rainfall. The amount of annual precipitation can vary greatly from one part of the SFBAAB to another, even within short distances. In general, total annual rainfall can reach 40 inches in the mountains, but it is often less than 16 inches in sheltered valleys.

During rainy periods, ventilation (rapid horizontal movement of air and injection of cleaner air) and vertical mixing are usually high, and this pollution levels tend to be low. However, frequent dry periods do occur during the winter when mixing and ventilation are low and pollutant levels build up.

## *Air Pollutants of Concern*

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards for outdoor concentrations. The federal and state standards have been set at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons (such as children, pregnant women, and the elderly) from illness or discomfort. Criteria air pollutants include ozone ($O_3$), nitrogen dioxide ($NO_2$), carbon monoxide (CO), sulfur dioxide ($SO_2$), particulate matter 2.5 microns or less in diameter (PM2.5), particulate matter ten microns or less in diameter (PM10), and lead (Pb). Note that reactive organic gases (ROGs), which are also known as reactive organic compounds (ROCs) or volatile organic compounds (VOCs), and nitrogen oxides (NOx) are not classified as criteria pollutants. However, ROGs and NOx are widely emitted from land development projects and participate in photochemical reactions in the atmosphere to form $O_3$; therefore, NOx and ROGs are relevant to the proposed Project and are of concern in the Basin. As such, they are listed below along with the criteria pollutants. Sources and health effects commonly associated with criteria pollutants are summarized in **Table 1, Criteria Pollutants Summary of Common Sources and Effects**.

**Table 1**
**Criteria Pollutants Summary of Common Sources and Effects**

| Pollutant | Major Man-Made Sources | Human Health & Welfare Effects |
|---|---|---|
| Carbon Monoxide (CO) | An odorless, colorless gas formed when carbon in fuels is not burned completely; a component of motor vehicle exhaust. | Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death. |
| Nitrogen Dioxide ($NO_2$) | A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include moto vehicles, electric utilities, and other sources that burn fuel. | Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to global warming and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere. |
| Ozone ($O_3$) | Formed by a chemical reaction between volatile organic compounds (VOC) and nitrous oxides (NOx) in the presence of sunlight. VOCs are also commonly referred to as reactive organic gases (ROGs). Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills. | Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles, and dyes. |

| Pollutant | Major Man-Made Sources | Human Health & Welfare Effects |
|---|---|---|
| Particulate Matter (PM10 & PM2.5) | Produced by power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and others. | Increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze). |
| Sulfur Dioxide ($SO_2$) | A colorless, nonflammable gas formed when fuel containing sulfur is burned; when gasoline is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships. | Respiratory irritant; aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron, and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain. |

*Source: California Air Resources Board, Common Air Pollutants, available online at: https://ww2.arb.ca.gov/resources/common-air-pollutants, accessed March 19, 2025.*

## 2.2 AMBIENT AIR QUALITY

### Criteria Air Pollutant Monitoring Data

Ambient air quality in the area surrounding the Project Site can be characterized by ambient air quality measurements conducted at nearby air quality monitoring stations. Existing ambient air quality and historical trends and projections in the vicinity are documented by measurements made by the Bay Area Air District (BAAD),[3] the air pollution regulatory agency in the SFBAAB region that maintains air quality monitoring stations which process ambient air quality measurements.

The purpose of the monitoring station is to measure ambient concentrations of pollutants and determine whether ambient air quality meets the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS). $O_3$ and particulate matter (PM10 and PM2.5) are pollutants of particular concern in the SFBAAB. The monitoring station located closest to the Project Site is the San Rafael station, located at 534 4th Street in San Rafael, which monitors $O_3$, CO, $NO_2$, PM10, and PM2.5 and is located approximately 1.4 miles northwest of the Project Site. Ambient air emission concentrations vary due to localized variations in emissions sources and climate and should be considered generally representative of ambient concentrations at the Project Site (see **Table 2, Air Monitoring Station Ambient Pollutant Concentrations**).

3 The Bay Area Air Quality Management District is now referred to the Bay Area Air District (BAAD) as of January 22, 2025.

**Table 2**
**Air Monitoring Station Ambient Pollutant Concentrations**

| Pollutant | Standards[1] | Year | | |
|---|---|---|---|---|
| | | 2021 | 2022 | 2023 |
| **Ozone ($O_3$)[2]** | | | | |
| Maximum 1-hour concentration monitored (ppm) | | 0.082 | 0.074 | 0.066 |
| Maximum 8-hour concentration monitored (ppm) | | 0.066 | 0.066 | 0.053 |
| Number of days exceeding state 1-hour standard | 0.09 ppm | 0 | 0 | 0 |
| Number of days exceeding federal/state 8-hour standard | 0.070 ppm | 0 | 0 | 0 |
| **Fine Particulate Matter (PM10)** | | | | |
| Maximum 24-hour concentration monitored ($\mu g/m^3$) | | 29.4 | 38.2 | 41.9 |
| Annual average concentration monitored ($\mu g/m^3$) | | 14.7 | 13.7 | 12.7 |
| Number of samples exceeding federal standard | 150 $\mu g/m^3$ | 0 | 0 | 0 |
| **Fine Particulate Matter (PM2.5)** | | | | |
| Maximum 24-hour concentration monitored ($\mu g/m^3$) | | 29.1 | 30.8 | 34.7 |
| Annual average concentration monitored ($\mu g/m^3$) | | 7.0 | 6.8 | 5.3 |
| Number of samples exceeding federal standard | 35 $\mu g/m^3$ | 0 | 0 | 0 |

*Source: CARB. Select 8 Summary. Available at: https://www.arb.ca.gov/adam/select8/sc8start.php, accessed March 19, 2025.*
*NA = not available*
[1] *Parts by volume per million of air (ppm), micrograms per cubic meter of air ($\mu g/m^3$), or annual arithmetic mean (aam).*
[2] *The 8-hour federal $O_3$ standard was revised from 0.075 ppm to 0.070 ppm in 2015. The statistics shown are based on the 2015 standard of 0.070 ppm.*

The attainment status for the SFBAAB region is included in **Table 3, Attainment Status of the San Francisco Bay Area Air Basin**. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas. The SFBAAB region is designated as a nonattainment area for federal ozone and PM2.5 standards and is designated as nonattainment for state ozone, PM10, and PM2.5 standards.

**Table 3**
**Attainment Status of the San Francisco Bay Area Air Basin**

| Pollutant | State | Federal |
|---|---|---|
| Ozone ($O_3$) | Non-Attainment | Non-attainment |
| Particulate Matter (PM10) | Non-Attainment | Unclassified |
| Particulate Matter (PM2.5) | Non-Attainment | Nonattainment[a] |
| Carbon Monoxide (CO) | Attainment | Attainment |
| Nitrogen Dioxide ($NO_2$) | Attainment | Attainment |
| Sulfur Dioxide ($SO_2$) | Attainment | Attainment |
| Lead (Pb) | Attainment | Attainment |

*Source: BAAD, Air Quality Standards and Attainment Status. Available online at: http://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status#ten. Accessed March 19, 2025.*
*[a] On January 9, 2013, EPA issued a final rule to determine that the Bay Area attains the 24-hour PM2.5 national standard. This EPA rule suspends key SIP requirements as long as monitoring data continues to show that the Bay Area attains the standard. Despite this EPA action, the Bay Area will continue to be designated as "non-attainment" for the national 24-hour PM2.5 standard until such time as the Air District submits a "redesignation request" and a "maintenance plan" to EPA, and EPA approves the proposed redesignation.*

## Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic 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.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes, such as petroleum refining and chrome-plating operations; commercial operations, such as gasoline stations and dry cleaners; and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute affects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

To date, the California Air Resources Board (CARB) has designated over 200 compounds as TACs. Additionally, CARB has implemented control measures for a number of compounds that pose high risks

and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to a relatively few compounds.[4]

CARB identified diesel particulate matter (DPM) as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particulates and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine. Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs. Almost all diesel exhaust particle mass is 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

## Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. The BAAD's *2022 CEQA Guidelines* states that sensitive receptor population groups include children, the elderly, off-site workers, students, and those with preexisting medical conditions.[5] These receptors are typically found in residences, schools, parks and playgrounds, daycare centers, nursing homes, and medical facilities, but some receptors are overlooked because they are found in an unlikely location, such as encampments for the unhoused, warehouses with indoor sports facilities for children and youth, privately operated indoor playgrounds for young children, and privately operated youth-serving facilities.[6] Residential areas are considered sensitive receptors to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Children are considered more susceptible to health effects of air pollution due to their immature immune systems and developing organs.[7] As such, schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities. Recreational land uses are considered moderately sensitive to air pollution. Although

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4 California Air Resources Board, "CARB Identified Toxic Air Contaminants." Available online at: https://ww2.arb.ca.gov/resources/documents/carb-identified-toxic-air-contaminants, accessed March 19, 2025.

5 BAAD, *2022 CEQA Guidelines,* Adopted April 20, 2022. Available online at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed April 30, 2025.

6 *Ibid.*

7 Office of Environmental Health Hazard Assessment and The American Lung Association of California, "Air Pollution and Children's Health." Available online at: https://oehha.ca.gov/air/air-pollution-and-childrens-health-fact-sheet-oehha-and-american-lung-association, accessed on March 19, 2025.

exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. The closest air quality-sensitive receptor to the Project Site is the Marin Health and Wellness Campus to the east along Kerner Boulevard (461 feet) and single-family residences to the east (1,482 feet).

# 3.0 REGULATORY FRAMEWORK

## 3.1 FEDERAL

### Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the U.S. Environmental Protection Agency (U.S. EPA) to establish NAAQS, with states retaining the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the Supreme Court found that carbon dioxide is an air pollutant covered by the CAA; however, no NAAQS have been established for carbon dioxide.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The U.S. EPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for nonattainment or attainment designations. **Table 3,** above, lists the federal attainment status of the Basin for the criteria pollutants.

### National Emissions Standards for Hazardous Air Pollutants Program

Under federal law, 187 substances are currently listed as hazardous air pollutants (HAPs). Major sources of specific HAPs are subject to the requirements of the National Emissions Standards for Hazardous Air Pollutants (NESHAPS) program. The U.S. EPA is establishing regulatory schemes for specific source categories and requires implementation of the Maximum Achievable Control Technologies (MACT) for major sources of HAPs in each source category. State law has established the framework for California's TAC identification and control program, which is generally more stringent than the federal program and is aimed at HAPs that are a problem is California. The state has formally identified 244 substances as TACs and is adopting appropriate control measures for each. Once adopted at the state level, each air district will be required to adopt a measure that is equally or more stringent.

## National Ambient Air Quality Standards

The federal CAA required the U.S. EPA to establish NAAQS. The NAAQS set primary standards and secondary standards for specific air pollutants**.** Primary standards define limits for the intention of protecting public health, which include sensitive populations such as asthmatics, children, and the elderly. Secondary Standards define limits to protect public welfare to include protection against decreased visibility, damage to animals, crops, vegetation, and buildings. A summary of the federal ambient air quality standards is shown in **Table 4, National Ambient Air Quality Standards**.

**Table 4**
**National Ambient Air Quality Standards**

| Pollutant | | Primary/Secondary | Averaging Time | Level |
|---|---|---|---|---|
| Carbon monoxide | | Primary | 8 hours | 9 ppm |
| | | | 1 hour | 35 ppm |
| Lead | | Primary and secondary | Rolling 3-month average | 0.15 μg/m$^3$ |
| Nitrogen dioxide | | Primary | 1 hour | 100 ppb |
| | | Primary and secondary | Annual | 53 ppb |
| Ozone | | Primary and secondary | 8 hours | 0.070 ppm |
| Particulate Matter | PM2.5 | Primary | Annual | 9 μg/m$^3$ |
| | | Secondary | Annual | 15 μg/m$^3$ |
| | | Primary and secondary | 24 hours | 35 μg/m$^3$ |
| | PM10 | Primary and secondary | 24 hours | 150 μg/m$^3$ |
| Sulfur dioxide | | Primary | 1 hour | 75 ppb |
| | | Secondary | Annual | 10 ppb |

*Source: US EPA. Last updated December 16, 2024. NAAQS Table. Available online at: https://www.epa.gov/criteria-air-pollutants/naaqs-table, accessed March 19, 2025.*

## 3.2 STATE

## California Clean Air Act of 1988

The California CAA of 1988 (CCAA) allows the state to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency (Cal EPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. The CCAA, amended in 1992, requires all air quality management districts (AQMDs) in the state to achieve and maintain the CAAQS. The CAAQS are generally stricter than national standards for the same pollutants and has also established state standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-

reducing particles, for which there are no national standards. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

## California Ambient Air Quality Standards

The federal CAA permits states to adopt additional or more protective air quality standards if needed. California has set standards for certain pollutants, such as particulate matter and ozone, which are more protective of public health than respective federal standards. California has also set standards for some pollutants that are not addressed by federal standards. The state standards for ambient air quality are summarized in **Table 5, California Ambient Air Quality Standards**.

**Table 5**
**California Ambient Air Quality Standards**

| Pollutant | | Averaging Time | Level |
|---|---|---|---|
| Carbon monoxide | | 8 hours | 9 ppm |
| | | 1 hour | 20 ppm |
| Lead | | 30-day average | 1.5 μg/m$^3$ |
| Nitrogen dioxide | | 1 hour | 0.180 ppm |
| | | Annual | 0.030 ppm |
| Ozone | | 8 hours | 0.070 ppm |
| | | 1 hour | 0.09 ppm |
| Particulate matter | PM2.5 | Annual | 12 μg/m$^3$ |
| | PM10 | 24 hours | 50 μg/m$^3$ |
| | | Annual | 20 μg/m$^3$ |
| Sulfur dioxide | | 1 hour | 0.25 ppm |
| | | 24 hours | 0.04 ppm |
| Sulfates | | 24 hours | 25 μg/m$^3$ |
| Hydrogen sulfide | | 1 hour | 0.03 ppm |
| Vinyl chloride | | 24 hours | 0.01 ppm |

*Source: California Air Resources Board. Last updated July 16, 2024. Ambient Air Quality Standards. Available online at: https://ww2.arb.ca.gov/sites/default/files/2024-08/AAQS%20Table_ADA_FINAL_07222024.pdf, accessed March 19, 2025.*

## California State Implementation Plan

The federal CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported

by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The U.S. EPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the U.S. EPA for approval and publication in the Federal Register. The 2017 Clean Air Plan: Spare the Air, Cool the Climate (2017 Clean Air Plan) is the SIP for Basin. The 2017 Clean Air Plan is a regional blueprint for achieving air quality standards and healthful air in the Basin that is under the BAAD's jurisdictions. The 2017 Clean Air Plan represents a new approach, focusing on available, proven, and cost-effective alternatives to traditional strategies, while seeking to achieve multiple goals in partnerships with other entities promoting reductions in GHGs and toxic risk, as well as efficiencies in energy use, transportation, and goods movement.[8] The most effective way to reduce air pollution impacts is to reduce emissions from mobile sources. The 2017 Clean Air Plan relies on regional and multi-level partnerships of governmental agencies at the federal, state, regional, and local levels. Those agencies (U.S. EPA, CARB, local governments, Association of Bay Area Governments [ABAG], and the BAAD) are the primary agencies that implement the Air Quality Management Plan (AQMP) programs. The 2017 Clean Air Plan incorporates the latest scientific and technical information and planning assumptions, updated emission inventory methodologies for various source categories, and ABAG's latest growth forecasts. The 2017 Clean Air Plan includes integrated strategies and measures to meet the NAAQS.

## California Air Toxics "Hot Spots" Information and Assessment Act (AB 2588)

The California Air Toxics Program is supplemented by the Air Toxics "Hot Spots" program, which became law (AB 2588, Statutes of 1987) in 1987. In 1992, the AB 2588 program was amended by Senate Bill 1731 to require facilities that pose a significant health risk to the community to perform a risk reduction audit and reduce their emissions through implementation of a risk management plan. Under this program, which is required under the Air Toxics "Hot Spots" Information and Assessment Act (Section 44363 of the California Health and Safety Code), facilities are required to report their air toxics emissions, assess health risks, and notify nearby residents and workers of significant risks when present.

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8 BAAD, *2017 Clean Air Plan: Spare the Air, Cool the Climate*, April 19, 2017. Available online at: https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?rev=8c588738a4fb455b9cabb27360409529, accessed March 19, 2025.

Typically, land development projects generate diesel emissions from construction vehicles during the construction phase, as well as some diesel emissions from small trucks during the operational phase. Diesel exhaust is mainly composed of particulate matter and gases, which contain potential cancer-causing substances. Emissions from diesel engines currently include over 40 substances that are listed by the U.S. EPA as hazardous air pollutants and by CARB as TACs. On August 27, 1998, CARB identified particulate matter in diesel exhaust as a TAC, based on data linking diesel particulate emissions to increased risks of lung cancer and respiratory disease.[9]

In March 2015, the Office of Environmental Health Hazard Assessment (OEHHA) adopted *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments* in accordance with the Health and Safety Code, Section 44300. The *2015 OEHHA Final Guidance Manual* incorporates the scientific basis from three earlier developed Technical Support Documents to assess risk from exposure to facility emissions. The *2015 OEHHA Final Guidance Manual* has key changes including greater age sensitivity in particular for children, decreased exposure durations, and higher breathing rate profiles. Because cancer risk could be up to three times greater using this new guidance, it may result in greater mitigation requirements, more agency backlog, and increased difficulty in getting air permits.

The CARB provides a computer program, the Hot Spots Analysis and Reporting Program (HARP), to assist in a coherent and consistent preparation of a Health Risk Assessment (HRA). The HARP is a software suite that addresses the programmatic requirements of the Assembly Bill (AB) 2588 Air Toxics "Hot Spots" Program. HARP incorporates the information presented in the 2015 Air Toxics Hotspots Program Guidance Manual for Preparation of Health Risk Assessments. HARP is divided into three programs: the Emissions Inventory Module (EIM), Air Dispersion Modeling and Risk Tool (ADMRT), and Risk Assessment Standalone Tool (RAST). HARP can be used by the air pollution control and air quality management districts (districts), facility operators and other organizations or individuals to promote statewide consistency, efficiency and cost-effective development of facility emission inventories and conducting health risk assessments. HARP can also be used for conducting health risk assessments used in other programs (e.g., facility permitting and CEQA reviews).

9 Diesel exhaust is included within pollutants subject to the hotspot program. Please refer to OEHHA's Air Toxics Hot Spot Program Risk Assessment Guidelines. Available online at: https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

## 3.3 REGIONAL

### Bay Area Air District[10]

The BAAD is the primary agency responsible for assuring that the NAAQS and CAAQS are attained and maintained in the Bay Area. BAAD's jurisdiction includes all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, and the southern portions of Solano and Sonoma counties. The BAAD's responsibilities in improving air quality in the region include: preparing plans for attaining and maintaining air quality standards; adopting and enforcing rules and regulations; issuing permits for stationary sources of air pollutants; inspecting stationary sources and responding to citizen complaints; monitoring air quality and meteorological conditions; awarding grants to reduce mobile emissions; implementing public outreach campaigns; and assisting local governments in addressing climate change.

### *BAAD Rules and Regulations*

The BAAD establishes and administers a program of rules and regulations to achieve and maintain state and national air quality standards and regulations. Rules and regulations that are applicable to the Project include, but are not limited to, the following:[11]

- **Regulation 2 (Permits)** – this regulation specifies the requirements for authorities to construct and permits to operate.
- **Regulation 6, Rule 1 (General Requirements)** – this rule limits the quantity of particulate matter in the atmosphere by controlling emission rates, concentration, visible emissions, and opacity.
- **Regulation 6, Rule 6 (Prohibition of Trackout)** – this rule reduces limits the quantity of particulate matter in the atmosphere through control of trackout of solid materials onto paved public roads outside the boundaries of Large Bulk Material Sites, Large Construction Sites, and Large Construction Sites, and Large Disturbed Surface sites including landfills (applicable to sites greater than one acre).
- **Regulation 8, Rule 1 (General Provisions 2021 Amendment)** – this regulation limits the emission of organic compounds to the atmosphere.

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10 The Bay Area Air Quality Management District is now referred to the Bay Area Air District (BAAD) as of January 22, 2025.

11 BAAD, "Current Rules." Available online at: https://www.baaqmd.gov/rules-and-compliance/current-rules, accessed March 19, 2025.

- **Regulation 8, Rule 3 (Architectural Coatings)** – this rule limits the quantity of volatile organic compounds in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the District.

- **Regulation 8, Rule 5 (Storage of Organic Liquids)** – this rule limits emissions of organic compounds from storage tanks.

- **Regulation 8, Rule 15 (Emulsified and Liquid Asphalts)** – this rule limits the emissions of volatile organic compounds caused by the use of emulsified and liquid asphalt in paving materials and pacing and maintenance operations.

Additionally, the BAAD recommends that all proposed projects implement the following Basic Best Management Practices (BMPs) for Construction-Related Fugitive Dust Emissions:[12]

- **B-1:** All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

- **B-2:** All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

- **B-3:** All visible mud or dirt track-out onto adjacent roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

- **B-4:** All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

- **B-5:** All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

- **B-6:** All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.

- **B-7:** All trucks and equipment, including their tires, shall be washed off prior to leaving the site.

- **B-8:** Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel.

- **B-9:** Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action

12 BAAD, *2022 CEQA Guidelines,* Adopted April 20, 2022. Available online at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed April 30, 2025.

within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

## Association of Bay Area Governments and the Metropolitan Transportation Commission

The Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) are the two regional planning agencies for the Bay Area's nine counties – Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma. The ABAG and the MTC are responsible for developing and adopting a sustainable communities strategy (SCS) that integrates transportation, land use, and housing to meet CARB's 7 percent per capita GHG reduction by 2020 goal and a 15 percent per capita GHG reduction by 2035 goal for the Bay Area. ABAG and MTC adopted the Plan Bay Area 2050 Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS) on October 21, 2021. The RTP/SCS states that the ABAG region is home to about 8 million people and currently includes approximately 4 million jobs.[13] The RTP/SCS projects that, by 2050, these figures will increase to 10 million people and 5 million jobs.[14] The Plan Bay Area 2050 outlines 35 strategies to improve housing, the economy, transportation, and the environment to support a Bay Area that is affordable, connected, diverse, healthy, and vibrant through 2050 and beyond. If Plan Bay Area 2050's strategies were implemented, housing and transportation costs, the two largest expenditures for most Bay Area families, would decrease as a share of household income by 2050, and families with low incomes would see larger reductions in these costs than the region at large.[15] Additionally, under Plan Bay Area 2050's strategies, just under half of all Bay Area households would live within one half-mile of frequent transit by 2050, with this share increasing to over 70 percent for households with low incomes.[16] Greenhouse gas emissions from transportation would decrease significantly as a result of these transportation and land use changes, and the Bay Area would meet the state mandate of a 19 percent reduction in per capita emissions by 2035 — but only if all strategies are implemented.[17]

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13 ABAG, MTC, *Plan Bay Area 2050,* October 21, 2021. Available online at: https://planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021.pdf, accessed March 24, 2025.

14 *Ibid.*

15 *Ibid.*

16 *Ibid.*

17 *Ibid.*

## 3.4 LOCAL

### City of San Rafael

#### *San Rafael General Plan 2040*

The City adopted the San Rafel General Plan 2040 (General Plan) on August 2, 2021. The General Plan provides a vision for the City's future and a commitment to the City's residents and businesses through sustaining existing great qualities but also through improvements that forge a more resilient, equitable, and healthy future for the City.[18] The General Plan contains chapters that provide goals and policies pertaining to improving air quality. Air quality related goals and policies that are relevant to the Project are listed below:

**Conservation and Climate Change Element**

**Goal C-2:** **Clean Air.** Reduce air pollution to improve environmental quality and protect public health.

**Policy C-2.1:** State and Federal Air Quality Standards. Continue to comply with state and federal air quality standards.

**Policy C-2.2:** **Land Use Compatibility and Buildings Standards.** Consider air quality conditions and the potential for adverse health impacts when making land use and development decisions. Buffering, landscaping, setback standards, filters, insulation and sealing, home HVAC measures, and similar measures should be used to minimize future health hazards.

**Policy C-2.3:** **Improving Air Quality Through Land Use and Transportation Choices.** Recognize the air quality benefits of reducing dependency on gasoline-powered vehicles. Implement land use and transportation policies, supportable by objective data, to reduce the number and length of car trips, improve alternatives to driving, reduce vehicle idling, and support the shift to electric and cleaner-fuel vehicles.

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18 City of San Rafael, *San Rafael General Plan 2040*, August 2, 2021. Available online at: https://files.ceqanet.opr.ca.gov/274617-2/attachment/RdmHH0iljbPCCRa4ssb-qcgUA6ZFqcjPOSzMIicDxdJXw5Y_CAd9e3wjHZdJsJmMoZpUvqZhN5sQt-Yb0, accessed March 20, 2025.

**Policy C-2.4:** **Particulate Matter Pollution Reduction.** Promote the reduction of particulate matter from roads, parking lots, construction sites, agricultural lands, wildfires, and other sources.

**Policy C-2.5:** **Indoor Air Pollutants.** Reduce exposure to indoor air pollutants such as mold, lead, and asbestos through the application of state building standards, code enforcement activities, education, and remediation measures.

**Mobility Element**

**Goal M-1:** **Regional Leadership in Mobility.** Take a leadership role in developing regional transportation solutions.

**Policy M-1.4:** **Transportation Innovation.** Take a leadership role in delivering innovative transportation services and improvements.

**Goal M-3:** **Cleaner Transportation.** Coordinate transportation, land use, community design, and economic development decisions in a way that reduces GHG emissions, air and water pollution, noise, and other environmental impacts related to transportation.

**Policy M-3.1:** **VMT Reduction.** Achieve State-mandated reductions in Vehicle Miles Traveled [VMT] by requiring development and transportation projects to meet specific VMT metrics and implement VMT reduction measures.

**Policy M-3.3:** **Transportation Demand Management.** Encourage, and where appropriate require, transportation demand measures that reduce VMT and peak period travel demand. These measures include, but are not limited to, transit passes and flextime, flexible work schedules, pedestrian and bicycle improvements, ridesharing, and changes to project design to reduce trip lengths and encourage cleaner modes of travel.

**Policy M-3.5:** **Alternative Transportation Modes.** Support efforts to create convenient, cost-effective alternatives to single passenger auto travel. Ensure that public health, sanitation, and user safety is addressed in the design and operation of alternative travel modes.

**Policy M-3.6:** **Low Carbon Transportation.** Encourage electric and other low-carbon emission vehicles, as well as the infrastructure needed to support these vehicles.

**Policy M-3.8:** **Land Use and VMT.** Encourage higher-density employment and residential uses near major transit hubs such as Downtown San Rafael, recognizing the potential for VMT reduction in areas where there are attractive alternatives to driving, concentrations of complementary activities, and opportunities for shorter trips between different uses.

# 4.0 AIR QUALITY ANALYSIS

## 4.1 THRESHOLDS AND METHODOLOGY

### Thresholds of Significance

The impact analysis provided below is based on the application of the following *State CEQA Guidelines* Appendix G, which indicates that a project would have a significant impact on air quality if it would:

1. Conflict with or obstruct implementation of any applicable air quality plan.

2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.

3. Expose sensitive receptors to substantial pollutant concentrations.

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

The *State CEQA Guidelines* (Section 15064.7) provide that, when available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make determinations of significance. The potential air quality impacts of the Project are, therefore, evaluated according to thresholds developed by the BAAD, which are discussed below.

### BAAD Thresholds

The BAAD's *2022 CEQA Guidelines* set forth methodologies and quantitative significance thresholds that a lead agency may use to estimate and evaluate the significance of a project's air emissions (see **Table 6, Bay Area Air District Regional Significance Thresholds)**.[19] The BAAD has also established significance thresholds for the excess health risks posed to nearby sensitive receptors (see **Table 7, Health Risk Significance Thresholds**).

19 BAAD, *2022 CEQA Guidelines,* Adopted April 20, 2022. Available online at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed April 30, 2025.

**Table 6**
**Bay Area Air District Regional Significance Thresholds**

| Pollutant | Construction-Related | Operational-Related | |
|---|---|---|---|
| | Average Daily Emissions (lbs/day) | Average Daily Emissions (lbs/day) | Maximum Annual Emissions (tpy) |
| ROG | 54 | 54 | 10 |
| NOx | 54 | 54 | 10 |
| PM10 (exhaust) | 82 | 82 | 15 |
| PM2.5 (exhaust) | 54 | 54 | 10 |
| PM10/PM2.5 (fugitive dust) | Best Management Practices | None | |
| CO | Not Applicable | 9.0 ppm (8-hour average) or 20.0 (1-hour average) | |
| Fugitive Dust | Best Management Practices | None | |

*Source: BAAD, 2022 CEQA Guidelines, Adopted April 20, 2022. Available online at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed April 30, 2025.*

**Table 7**
**Health Risk Significance Thresholds**

| Local Risks and Hazards | |
|---|---|
| Risks and hazards for new sources and receptors (cumulative threshold) | Cancer Risk: > 100 in a million (from all local sources)<br>Non-cancer: > 10.0 Hazard Index (chronic, from all local sources)<br>PM2.5: > 0.8 µg/m3 annual average (from all local sources) OR<br>Compliance with Qualified Community Risk Reduction Plan |
| Risks and hazards for new sources and receptors (individual project) | Increased Cancer Risk >10.0 in a million<br>Increased Non-cancer > 1.0 Hazard Index (chronic or acute)<br>PM2.5 increase: > 0.3 µg/m3 annual average<br>OR Compliance with Qualified Community Risk Reduction Plan |

*Source: BAAD, 2022 CEQA Guidelines, Adopted April 20, 2022. Available online at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed April 30, 2025.*

## Methodology

This analysis focuses on the nature and magnitude of the change in the air quality environment due to implementation of the Project. Air pollutant emissions associated with the Project would result from Project onsite operations and from Project-related traffic volumes. Construction activities would also generate air pollutant emissions at the Project Site and on roadways resulting from construction-related traffic. The

increase in Project Site emissions generated by these activities and other secondary sources have been quantitatively estimated and compared to thresholds of significance recommended by the BAAD (see **Project Impacts** subsection, below).

### *Construction Emissions*

The regional construction emissions associated with the Project were calculated using the California Emissions Estimator Model (CalEEMod). CalEEMod was developed in collaboration with the air districts of California as 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.

Construction activities associated with site preparation, grading, and building construction would generate pollutant emissions. Specifically, these construction activities would temporarily create emissions of dusts, fumes, equipment exhaust, and other air contaminants. These construction emissions were compared to the thresholds established by the BAAD.

### *Operational Emissions*

Operational emissions associated with the Project were also calculated using CalEEMod. Operational emissions associated with the Project would comprise mobile source emissions, energy demand, and other area source emissions. Mobile source emissions are generated by the increase in motor vehicle trips to and from the Project Site associated with operation of the Project. Area source emissions are generated by landscape maintenance equipment, application of architectural coatings, and consumer products. To determine if a regional air quality impact would occur, the increase in emissions is compared with the BAAD's recommended regional thresholds for operational emissions.

The 2022 Gasoline Service Station Industrywide Risk Assessment Technical Guidance Manual (Technical Guidance)[20] is also utilized to determine risk values associated with the Project's 10,000-gallon aboveground diesel tank and associated fuel pumps along the northern building façade. CARB staff and the California Air Pollution Control Officers Association (CAPCOA) conducted health analyses to evaluate the health impacts of emissions from gasoline service stations operating throughout the state. From these analyses, CARB and CAPCOA developed the Technical Guidance. The Technical Guidance also provides

20 CARB, CAPCOA, *Gasoline Service Station Industrywide Risk Assessment Technical Guidance,* February 18, 2022. Available online at: https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf, accessed May 2, 2025.

California Air Pollution Control and Air Quality Management Districts with recommended procedures for preparing gas station emission inventories and health risk assessments (HRA) to meet the requirements of individual facilities subject to AB 2588, the Air Toxics "Hot Spots" Program. The Technical Guidance provides guides, tools, and resources in order to perform HRAs for air pollutants from gas stations, such as the Look-Up tool used for this assessment.

## 4.2 PROJECT IMPACTS

**AQ Impact 1** **Would implementation of the Proposed Project conflict with or obstruct implementation of any applicable air quality plan? *(Less than Significant).***

As part of its enforcement responsibilities, the U.S. EPA requires each state with nonattainment areas to prepare and submit a SIP that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the CCAA requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the federal and state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

Drafted by the BAAD, the 2017 Clean Air Plan[21] was developed in effort with CARB, ABAG, and the U.S. EPA to establish a program of rules and regulations to reduce air pollutant emissions to achieve CAAQS and NAAQS and serves as one of two air quality plans for the District.[22] Criteria for determining consistency with the 2017 Clean Air Plan are proposed by three questions posed in the BAAD CEQA Air Quality Guidelines:[23]

1. Does the project support the goals of the Clean Air Plan?
2. Does the project include applicable control measures from the Clean Air Plan?
3. Does the project disrupt or hinder implementation of any control measures from the Clean Air Plan?

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21 BAAD, *2017 Clean Air Plan: Spare the Air, Cool the Climate*, April 19, 2017. Available online at: https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?rev=8c588738a4fb455b9cabb27360409529, accessed March 19, 2025.

22 The other air quality plan for the District is the *Owning the Air: The West Oakland Community Action Plan*. However, this plan is only relevant to West Oakland, which the Project is not included in.

23 BAAD, *2022 CEQA Guidelines,* Adopted April 20, 2022. Available online at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed April 30, 2025.

The 2017 Clean Air Plan includes control measures that are intended to reduce air pollutant emissions in the Bay Area either directly or indirectly. These control strategies are based on four key priorities:[24]

- Reduce emissions of criteria pollutants and toxic air contaminants from all key sources.
- Reduce emissions of "super-GHGs" such as methane, black carbon, and fluorinated gases.
- Decrease demand for fossil fuels (gasoline, diesel, and natural gas).
  - Increase efficiency of industrial processes, energy, and transportation systems
  - Reduce demand for vehicle travel, and high-carbon goods and services.
- Decarbonize our energy system.
  - Make the electricity supply carbon-free.
  - Electrify the transportation and building sectors.

Projects that are consistent with the development of a regional or local air quality plan are considered not to conflict with the attainment of air quality standards identified in the plan. Consistency with the air quality plan can be determined through evaluation of project-related air quality impacts and demonstration that project-related emissions would not increase the frequency or severity of existing violations or contribute to a new violation of the national ambient air quality standards. The BAAD CEQA Air Quality Guidelines include thresholds of significance that are applied to evaluate regional impacts of project-specific emissions of air pollutants and their impact on BAAD's ability to reach attainment. Emissions that are above these thresholds have not been accommodated in the air quality plans and would not be consistent with the air quality plans. As demonstrated in **Table 8** and **Table 9**, below, the Project would not conflict with the 2017 Clean Air Plan since emissions would not exceed BAAD thresholds (see **Table 6** and **Table 7** above). Additionally, the Project is supportive of the strategies proposed in the 2017 Clean Air Plan. The Project seeks to accommodate the current and future transit needs for Marin County. Marin Transit owns all of its vehicles but relies on three purchased transportation contract operators to operate both fixed route and demand response for public transit services. Presently, Marin Transit operates and maintains their fleet of buses from several different yards and facilities, creating inefficiencies and added costs. Until recently, Marin Transit did not own any facilities, which drove the need for many small contracts with requirements to provide associated transit vehicle parking and maintenance facilities. The District has made three small property purchases, but still needs a large site for parking, charging and maintenance for the District's 30- to 40-foot-long transit buses; these existing properties owned by the District will continue to operate after implementation of the Project, but the Project is necessary to not only provide a larger facility to accommodate the District's fleet of buses, but to also meet climate goals, and CARB requirements. Marin Transit is converting from diesel buses to electric under its Zero Emission Bus (ZEB) Plan. As part of the ZEB Plan, the District has acquired six electric buses and associated charging

24 *Ibid.*

infrastructure. While charging stations and solar power are provided at the smaller sites owned by the District, a larger site is needed for full electrification of the District's fleet. The Project facilitates transit services, which reduce VMT in the community by providing alternatives to private automobile travel and the Project supports the District's goals of transitioning to a fully electric fleet of buses, eventually eliminating the need for diesel fuel and thus eliminating fuel-based emissions from the Marin Transit District. Therefore, the Project would not conflict with or obstruct implementation of 2017 Clean Air Plan and supports the strategies the 2017 Clean Air Plan promotes. Impacts would be less than significant.

**AQ Impact 2** **Would implementation of the Proposed Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard? *(Less than Significant).***

A project may have a significant impact if project-related emissions would result in a cumulatively considerable net increase for a criteria pollutant for which the region in nonattainment under applicable federal or state ambient air quality standards. The cumulative analysis of air quality impacts follows BAAD guidance such that construction or operational project emissions will be considered cumulatively considerable if project-specific emissions exceed an applicable BAAD recommended daily threshold.

## *Construction Significance Analysis*

For purposes of this analysis, it is estimated that the Project would be constructed in approximately 18 months with construction beginning in 2027 and project operations commencing in 2029. While construction may begin at a later date and/or take place over a longer period, these assumptions represent the earliest and fastest build-out potential resulting in a worst-case daily impact scenario for purposes of this analysis. This analysis assumes construction would be undertaken with the following primary construction phases: (1) preparation/grading/foundation preparation, and (2) structural building and finishing. The grading and site preparation phase would occur for approximately one month and would require the import of 9,000 cubic yards of soil and an export of approximately 8,000 cubic yards of soil to accommodate the proposed subsurface work extending to depths of up to 10 feet below grade. Building construction will take approximately 17 months. The Project would also require paving and architectural coatings, which have conservatively been assumed to occur concurrently during the final month of the structural building and finishing phase.

The analysis of regional daily construction emissions has been prepared utilizing the CalEEMod computer model. Predicted daily construction-generated emissions for the Project are summarized in **Table 8, Construction-Related Criteria Pollutant and Precursor Emissions – Average Daily Emissions.** These

calculations assume that appropriate dust control measures would be implemented as part of the Project during each phase of development, as specified by BAAD Regulation 6, Rule 1 (General Requirements), Regulation 6, Rule 6 (Prohibition of Trackout), and Regulation 8, Rule 3 (Architectural Coatings). As shown in **Table 8**, the daily emissions generated during the construction of the Project would not exceed any of the emission thresholds established by the BAAD. Therefore, Project construction would not result in a cumulatively considerable net increase of any criteria air pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard. Impacts would be less than significant.

**Table 8**
**Construction-Related Criteria Pollutant and Precursor Emissions – Average Daily Emissions**

| Construction Year | ROG | NOx | CO | $SO_2$ | PM10 | PM2.5 |
|---|---|---|---|---|---|---|
| 2027 | 0.41 | 4.24 | 5.28 | 0.01 | 0.46 | 0.25 |
| 2028 | 1.28 | 6.79 | 9.92 | 0.02 | 0.29 | 0.22 |
| 2029 | 0.20 | 0.24 | 0.37 | < 0.01 | 0.01 | 0.01 |
| **Regional Threshold** | **54** | **54** | **None** | **None** | **82** | **54** |
| *Exceed?* | *No* | *No* | *No* | *No* | *No* | *No* |

*Source: Impact Sciences July 2025. See **Appendix A** to this report.*
*Note: While the BAAD thresholds of significance identify particulate matter thresholds for exhaust only, this table has conservatively presented the total (exhaust and dust) particulate matter emissions.*

## *Operational Significance Analysis*

Project-generated emissions would be associated with motor vehicle use, energy use, stationary sources (emergency generator), and area sources, such as the use of landscape maintenance equipment, consumer cleaning products, and architectural coatings associated with the operation of the Project. The operational emissions from the Project were calculated with CalEEMod and the operational emissions were compared against BAAD regional thresholds to determine Project significance. Long-term operational emissions attributable to the Project are summarized in **Table 9, Long-Term Operational Emissions**. As shown, the operational emissions generated by the Project would not exceed the regional thresholds of significance set by the BAAD. Additionally, the Project will contribute to a reduction in passenger vehicle trips by providing improved public transit services and would ultimately lead to a reduction in regional emissions since the Project supports the Marin Transit's ZEB Plan to electrify the District's entire fleet.

**Table 9**
**Long-Term Operational Emissions**

| Emissions Source | ROG | NOx | CO | $SO_2$ | PM10 | PM2.5 |
|---|---|---|---|---|---|---|
| **Average Daily Emissions (lbs/day)** | | | | | | |
| Mobile | 0.24 | 0.33 | 4.76 | 0.01 | 0.90 | 0.24 |
| Area | 0.54 | < 0.01 | 0.40 | < 0.01 | < 0.01 | < 0.01 |
| Energy | 0.01 | 0.21 | 0.18 | < 0.01 | 0.02 | 0.02 |
| Stationary | 0.02 | 0.07 | 0.06 | < 0.01 | < 0.01 | < 0.01 |
| **Total Average Daily Operational Emissions** | **0.81** | **0.62** | **5.40** | **< 0.04** | **< 0.94** | **< 0.28** |
| Average Daily Emissions Thresholds (lbs./day) | 54 | 54 | None | None | 82 | 54 |
| *Exceed Thresholds?* | *No* | *No* | *NA* | *NA* | *No* | *No* |
| **Annual Emissions (tons/year)** | | | | | | |
| Mobile Source | 0.04 | 0.06 | 0.87 | < 0.01 | 0.16 | 0.04 |
| Area Source | 0.10 | < 0.01 | 0.07 | < 0.01 | < 0.01 | < 0.01 |
| Energy Source | < 0.01 | 0.04 | 0.03 | < 0.01 | < 0.01 | < 0.01 |
| Stationary | < 0.01 | 0.01 | 0.01 | < 0.01 | < 0.01 | < 0.01 |
| **Total Annual Operational Emissions (tons/year)** | **< 0.16** | **0.12** | **0.98** | **< 0.04** | **< 0.19** | **< 0.07** |
| Annual Thresholds (tons/year) | 10 | 10 | None | None | 15 | 10 |
| *Exceed Thresholds?* | *No* | *No* | *NA* | *NA* | *No* | *No* |

*Source: Impact Sciences July 2025. See **Appendix A**. It is noted that many of the mobile source emissions presently exist in the region and the Project would relocate to a new site. Thus, the presentation of mobile source emissions here is conservative. While the BAAD thresholds of significance identify particulate matter thresholds for exhaust only, this table has conservatively presented the total (exhaust and dust) particulate matter emissions.*

As shown in **Table 8** and **Table 9**, the Project's construction and operational emissions would not exceed the BAAD's thresholds for any criteria air pollutants. Furthermore, as for cumulative construction and operational impacts, the Project will not produce cumulatively considerable emissions of nonattainment pollutants since the Project will not exceed BAAD thresholds. Furthermore, consistent with BAAD requirements, the Project would implement **Mitigation Measure AQ-1**. As such, the Project will result in a less than significant impact with mitigation.

**Mitigation Measures:** While impacts would be less than significant without mitigation, the BAAD requires the implementation of the BAAD Basic Best Management Practices for Construction-Related Fugitive Dust Emissions and would ensure impacts remain less than significant.

**AQ-1** The following BAAD Basic Best Management Practices for Construction-Related Fugitive Dust Emissions shall be implemented:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.
- Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

## *Air Quality Health Impacts*

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health. The national and state ambient air quality standards have been set at levels to protect human health with a determined margin of safety. As discussed previously, the Basin is in state non-attainment for PM2.5, PM10, and Ozone ($O_3$) and federal non-attainment for PM2.5 and $O_3$. Therefore, an increase in emissions of particulate matter or ozone precursors (ROG and NOx) has the potential to push the region further from

reaching attainment status and, as a result, are the pollutants of greatest concern in the region. As noted in **Table 8** and **Table 9** above, the Project will emit criteria air pollutants during construction and operation**.** However, the Project will not exceed BAAD thresholds for ozone precursors (ROG and NOx), PM2.5, PM10, or any other criteria air pollutants, and will not result in a cumulatively significant impact for which the region is in non-attainment. Thus, with respect to the Project's increase in criteria pollutant emissions, the Project would not have the potential cause significant air quality health impacts. With respect to the Project's potential TAC and DPM impacts upon sensitive receptors, please refer to the discussion under **AQ Impact 3**.

**AQ Impact 3** **Would implementation of the Proposed Project expose sensitive receptors to substantial air pollutant concentrations? (*Less than Significant).***

Based on the BAAD 2022 CEQA Guidelines, a significant impact may occur if a project were to generate pollutant concentrations to a degree that would significantly affect sensitive receptors.

**Construction**

Project impacts related to increased community risk could occur by introducing a new source of localized pollutants during construction and operation with the potential to adversely affect existing sensitive receptors in the Project vicinity. As previously discussed, a sensitive receptor is defined by the BAAD as "facilities or land uses that include member of the population that are particularly sensitive to the effects of air pollutant, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and residential areas." The BAAD recommends assessing the potential impacts within 1,000 feet of the Project Site in all directions. The closest air quality-sensitive receptor to the Project Site is the Marin Health and Wellness Campus to the east along Kerner Boulevard (461 feet) and single-family residences to the east (1,482 feet).

The primary sources of potential TACs under the Project would be construction activity and the associated generation of diesel particulate matter (DPM) emissions from the use of off-road diesel equipment required for grading, paving, and other construction activities. The amount to which nearby sensitive receptors are exposed (a function of concentration and duration of exposure) is the primary factor used to determine health risk. Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer.

Construction of the Project would not have the potential to generate significant health risks to off-site sensitive receptors due to the relatively small number of daily heavy construction equipment , the overall construction duration would be short (approximately 18 months), and the setback distances to off-site receptors with long-term exposure durations. As shown in more detail in **Appendix A**, during the heaviest

building construction period, onsite construction equipment would generate approximately 0.2 lbs/day of diesel exhaust emissions (PM2.5E). Emissions generated from the development of the new transit facility are temporary and localized and would cease upon completion of construction. Furthermore, health impacts associated with diesel exhaust are primarily a chronic risk, which means the receptor would need to be exposed to the pollutant for extended periods of time to potentially experience significant health risks (such as a resident in the same location for 30 years). As noted above, the closest air quality-sensitive receptor to the Project Site is the Marin Health and Wellness Campus to the east along Kerner Boulevard (461 feet). However, the wellness campus is an outpatient facility and does not provide overnight stays or result in long-term exposure for patients. As construction-related exhaust emissions would be relatively low and short term, and there are no sensitive receptors with long-term exposure in the vicinity of Project Site, the Project would not have the potential to expose sensitive receptors to substantial pollutant concentrations. This impact would be less than significant.

**Operation**

Project-operation impacts related to increased health risk can occur either by introducing a new source of TACs with the potential to adversely affect existing sensitive receptors, or by introducing a new sensitive receptor, such as a residential use, in proximity to an existing source of TACs. On August 27, 1998, CARB identified particulate matter in diesel exhaust as a TAC, based on data linking diesel particulate emissions to increased risks of lung cancer and respiratory disease.[25]

The Project proposes the development of a new transit facility to support the Marin Transit District, which includes a single 10,000-gallon aboveground diesel tank and associated fuel pumps along the northern building façade. This diesel tank would be subject to state, regional, and local regulations including but not limited to BAAD Regulation 8, Rule 5 (Storage of Organic Liquids)[26] and San Rafael Municipal Code Section 4.08.060 (Restrictions on the storage of flammable and combustible liquids in aboveground tanks outside of buildings).[27]

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25 Diesel exhaust is included within pollutants subject to the hotspot program. Please refer to OEHHA's Air Toxics Hot Spot Program Risk Assessment Guidelines. https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

26 BAAD, Regulation 8, Rule 5 – Storage of Organic Liquids. Available online at: https://www.baaqmd.gov/~/media/dotgov/files/rules/refinery-rules-definitions/rg0805_20211103-pdf.pdf?rev=9c35c64018e349c7aebb47d5243f0482&sc_lang=en, accessed May 1, 2025.

27 City of San Rafael, Municipal Code Section 4.08.060, Restrictions on the storage of flammable and combustible liquids in aboveground tanks outside of buildings. Available online at: https://library.municode.com/ca/san_rafael/codes/code_of_ordinances?nodeId=TIT4FI_CH4.08FICO_4.08.060RESTFLCOLIABTAOUBU, accessed April 30, 2025.

In addition to the regulatory controls identified above, this analysis includes a screening level assessment of the Project's potential health risks from the diesel refueling station to receptors, including residential areas. This analysis utilizes the CARB Gasoline Service Station Industrywide Risk Assessment Technical Guidance (Technical Guidance) and Look-up Tool.[28] The required inputs for the tool are annual throughput (gallons per year), distance to nearest resident (meters), distance to nearest business (meters), and distance to acute receptor (meters). According to the Project Proponent, the estimated annual throughput is approximately 330,000 gallons per year. The nearest resident is approximately 452 meters east of the fuel pump location, and the nearest business and acute receptor would be adjacent to the Project Site, approximately 15 meters from the fuel pump location. As shown in **Table 10, Health Risk Results,** the Project would not exceed the thresholds established by the BAAD.

**Table 10**
**Health Risk Results**

| Risk Value | Results | BAAD Thresholds |
|---|---|---|
| Maximum Residential Cancer Risk (chances/million) | 0.01 | 10.0 |
| Maximum Worker Cancer Risk (chances/million) | 0.21 | 10.0 |
| Chronic HI | 0.01 | 1.0 |
| Acute HI | 0.54 | 1.0 |

*Source: Impact Sciences, Inc. 2025. See Appendix A for CARB & CAPCOA Gasoline Service Station Industrywide Risk Assessment Look-Up Tool results.*

While the District's fleet of buses are largely operated on diesel, Marin Transit is converting from diesel buses to electric under its ZEB Plan. As part of the ZEB Plan, the District has acquired six electric buses and associated charging infrastructure. While charging stations and solar power are provided at the smaller sites owned by the District, the large size of the Project Site can accommodate the eventual full electrification of the District's fleet. The Project will support both diesel and electric vehicles, so the diesel refueling station will be included to service diesel buses until the transition to an all-electric fleet is completed. As previously discussed, the diesel refueling station is a stationary source that is subject to compliance with state and local regulations regarding the storage and distribution of fuel, such as BAAD Regulation 8, Rule 5 (Storage of Organic Liquids) and San Rafael Municipal Code Section 4.08.060 (Restrictions on the storage of flammable and combustible liquids in aboveground tanks outside of buildings). While **Table 10** demonstrated that the Project would not result in adverse health risks,

28 CARB, Gasoline Service Station Industrywide Risk Assessment Guidance, February 18, 2022. Available online at: https://ww2.arb.ca.gov/sites/default/files/2022-03/Draft%202022%20Gas%20Station%20IWG%20-%20Technical%20Guidance_ADA%20Compliant.pdf, accessed May 1, 2025.

adherence regulations regarding the storage and distribution of fuel will ensure that the Project's diesel refueling station would not expose sensitive receptors to potential health risks. As such, the Project would not contribute to human health risk to nearby receptors during operation, and the Project would also not contribute to any cumulative human health risk impact.

**Carbon Monoxide Hotspots**. The BAAD's CEQA Guidelines include screening criteria for localized carbon monoxide (CO) concentrations. The BAAD Guidelines state that a proposed project would be considered to have a less than significant CO concentration if:

1. Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.

2. The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.

3. The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system. According to the Traffic and CEQA and NEPA Assessment prepared for the Project, a 48-hour tube count on Francisco Boulevard East, about 100 feet to the south of Castro Avenue revealed a daily total traffic volume of 8,330 vehicles.[29] The Project is estimated to generate a total of 176 trips, with 112 of these trips coming from employee vehicles and 64 of these trips coming from the District's buses. Thus, the daily trips generated from the Project combined with the existing traffic volumes at the busiest intersection would not have the potential to increase traffic volumes at affected intersections to more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizonal mixing is substantially limited. Additionally, according to the Governor's Office of Planning and Research Technical Advisory on Evaluating Transportation Impacts in CEQA, transit and active transportation projects generally reduce VMT and therefore are presumed to cause a less-than-significant impact on transportation. This presumption may apply to all passenger rail projects, bus and bus rapid transit projects, and bicycle and pedestrian infrastructure projects.[30] Accordingly, the Project would not have the potential to cause or contribute to an

29 Fehr & Peers, *Traffic and CEQA and NEPA Assessment – Marin Transit Facility at 1075 Francisco Boulevard East, San Rafael*, April 30, 2025.

30 *Ibid.*

exceedance of the California one-hour or eight-hour CO standards. Impacts with respect to localized CO concentrations would be less than significant.

**Mitigation Measures: No mitigation measures are required.**

**AQ Impact 4** **Would the Proposed Project include sources that could create other emissions (such as those leading to odors) adversely affecting a substantial number of people? (*Less than Significant).***

The BAAD Air Quality Guidelines identify certain land uses as sources of odors. These land uses include wastewater treatment plants, food processing facilities, composting facilities, petroleum refineries, chemical manufacturing, landfills, dairies, and fiberglass manufacturing. The Project is a transit facility and is not considered to be a substantial odor source.

Construction activities associated with the Project may generate detectable odors from heavy-duty equipment exhaust and architectural coatings. However, construction-related odors would be short-term in nature and cease upon buildout. In addition, the Project would be required to comply with the California Code of Regulations, Title 13, sections 2449(d)(3) and 2485, which minimizes the idling time of construction equipment either by shutting it off when not in use or by reducing the time of idling to no more than five minutes. This would reduce the detectable odors from heavy-duty equipment exhaust. Any odor impacts to existing adjacent land uses would be short-term and not substantial. As such, the Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people and this impact would be less than significant.

# 5.0 GREENHOUSE GAS

## 5.1 GREENHOUSE GAS SETTING

### Global Climate Change Background

Global climate change refers to any significant change in climate measurements, such as temperature, precipitation, or wind, that lasts for an extended period (i.e., decades or longer).[31] Climate change may result from:

- Natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;
- Natural processes within the climate system (e.g., changes in ocean circulation, reduction in sunlight from the addition of GHG and other gases to the atmosphere from volcanic eruptions); and
- Human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, desertification).

The third bullet is the focus of climate change legislation. The natural process through which heat is retained in the troposphere[32] is called the "greenhouse effect." The greenhouse effect traps heat in the troposphere through a three-fold process as follows: (1) short-wave radiation in the form of visible light emitted by the Sun is absorbed by the Earth as heat; (2) long-wave radiation is re-emitted by the Earth; and (3) GHGs in the atmosphere absorb or trap the long-wave radiation and re-emit it back towards the Earth and into space.

While water vapor and carbon dioxide ($CO_2$) are the most abundant GHGs, other trace GHGs have a greater ability to absorb and re-radiate long-wave radiation. To gauge the potency of GHGs, scientists have established a Global Warming Potential (GWP) for each GHG based on its ability to absorb and re-emit long-wave radiation over a specific period. The GWP of a gas is determined using $CO_2$ as the reference gas with a GWP of 1 over 100 years. For example, a gas with a GWP of 10 is 10 times more potent than $CO_2$ over 100 years. The use of GWP allows GHG emissions to be reported using $CO_2$ as a baseline. The sum of each GHG multiplied by its associated GWP is referred to as carbon dioxide equivalents ($CO_2e$). This

31 U.S. Environmental Protection Agency, "Glossary of Climate Change Terms." Available online at: https://19january2017snapshot.epa.gov/climatechange/glossary-climate-change-terms_.html. Accessed March 21, 2025.

32 The troposphere is the bottom layer of the atmosphere, which varies in height from the Earth's surface to 10 to 12 kilometers.

essentially means that 1 metric ton of a GHG with a GWP of 10 has the same climate change impacts as 10 metric tons of $CO_2$.

## Greenhouse Gas Emissions and Climate Change

Earth's natural warming process is known as the "greenhouse effect." The greenhouse effect compares the Earth and the atmosphere surrounding it to a greenhouse with glass panes. The glass panes in a greenhouse let heat from sunlight in and reduce the amount of heat that escapes. Certain atmospheric gases, known as GHGs, act as an insulating blanket for solar energy to keep the global average temperature in a suitable range for life support. These GHGs keep the average surface temperature of the Earth close to 60 degrees Fahrenheit (°F). Without the natural greenhouse effect, the Earth's surface would be about 61°F cooler.[33] It is normal for Earth's temperature to fluctuate over extended periods of time. Over the past one hundred years, Earth's average global temperature has generally increased by 1°F. In some regions of the world, the increase has been as much as 4°F.

Scientists studying the particularly rapid rise in global temperatures during the late 20th century believe that natural variability alone does not account for that rise. Rather, human activity spawned by the industrial revolution has likely resulted in increased emissions of carbon dioxide ($CO_2$) and other forms of GHGs, primarily from the burning of fossil fuels (i.e., during motorized transport, electricity generation, consumption of natural gas, industrial activity, manufacturing, etc.) and deforestation, as well as agricultural activity and the decomposition of solid waste.[34]

## GHG Pollutants and Effects

The California Global Warming Solutions Act of 2006 (discussed in the following pages) defined GHGs to include carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), hydrofluorocarbons (HFC), perfluorocarbons (PFC), sulfur hexafluoride ($SF_6$), and nitrogen trifluoride. Black carbon also contributes to global warming, but it is a solid particle or aerosol, not a gas. A general description of each GHG discussed in this section is provided in **Table 11, Description of Greenhouse Gases**. $CO_2$ is the most abundant GHG. Other GHGs are less abundant but have higher global warming potential (discussed below) than $CO_2$. Thus, emissions of other GHGs are frequently expressed in the equivalent mass of $CO_2$, referred to as $CO_2$ equivalents and denoted as $CO_2e$. Forest fires, decomposition of organic material,

33 California Environmental Protection Agency, *Climate Action Team Report to Governor Schwarzenegger and the Legislature*, 2006.

34 Center for Climate and Energy Solutions, *Climate Change 101*, 2011.

industrial processes, landfills, and consumption of fossil fuels for power generation, transportation, heating, and cooking are the primary sources of GHG emissions.

**Table 11**
**Description of Greenhouse Gases**

| Pollutant | General Description |
|---|---|
| Carbon Dioxide ($CO_2$) | $CO_2$ is an odorless, colorless GHG, which has both natural and man-made sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing; manmade sources of $CO_2$ are burning coal, oil, natural gas, and wood. |
| Methane ($CH_4$) | $CH_4$ is a flammable gas and is the main component of natural gas. When one molecule of $CH_4$ is burned in the presence of oxygen, one molecule of $CO_2$ and two molecules of water are released. There are no ill health effects from $CH_4$. A natural source of $CH_4$ is the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain $CH_4$, which is extracted for fuel. Other sources are from landfills, fermentation of manure, and cattle. |
| Nitrous Oxide ($N_2O$) | $N_2O$ is a colorless GHG. High concentrations can cause dizziness, euphoria, and sometimes slight hallucinations. $N_2O$ is produced by microbial processes in soil and water, including those reactions which occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load. It is used in rocket engines, racecars, and as an aerosol spray propellant. |
| Hydrofluorocarbons (HFCs) | HFCs are synthetic man-made chemicals that are used as a substitute for chlorofluorocarbons (CFCs) for automobile air conditioners and refrigerants. CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at Earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. Because they destroy stratospheric ozone, the production of CFCs was stopped as required by the Montreal Protocol in 1987. |
| Perfluorocarbons (PFCs) | PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere. High-energy ultraviolet rays about 60 kilometers above Earth's surface are able to destroy the compounds. PFCs have very long lifetimes, between 10,000 and 50,000 years. Two common PFCs are tetrafluoromethane and hexafluoroethane. The two main sources of PFCs are primary aluminum production and semiconductor manufacture. |
| Sulfur Hexafluoride ($SF_6$) | $SF_6$ is an inorganic, odorless, colorless, non-toxic, and nonflammable gas. $SF_6$ is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection. |
| Black Carbon /a/ | Black Carbon. Black carbon is the most strongly light-absorbing component of particulate matter emitted from burning fuels such as coal, diesel, and biomass. |

*Source: Association of Environment Professionals, Alternative Approaches to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents, 2007.*
*/a/ Black carbon contributes to global warming, but it is a solid particle or aerosol, not a gas.*

## Global Warming Potential

Global Warming Potential (GWP) is one type of simplified index based upon radiative properties that is used to estimate the potential future impacts of emissions of different gases upon the climate system in a

relative sense. GWP is based on a number of factors, including the radiative efficiency (heat-absorbing ability) of each gas relative to that of $CO_2$, as well as the decay rate of each gas (the amount removed from the atmosphere over a given number of years) relative to that of $CO_2$. A summary of the atmospheric lifetime and GWP of selected gases is presented in **Table 12, Atmospheric Lifetimes and Global Warming Potential for Greenhouse Gases**.

**Table 12**
**Atmospheric Lifetimes and Global Warming Potential for Greenhouse Gases**

| Greenhouse Gas | Lifetime (Years) | Global Warming Potential Factor (20-Year) | Global Warming Potential Factor (100-Year) |
|---|---|---|---|
| Carbon Dioxide | 100 | 1 | 1 |
| Nitrous Oxide | 121 | 264 | 298 |
| Nitrogen Trifluoride | 500 | 12,800 | 16,100 |
| Sulfur Hexafluoride | 3,200 | 17,500 | 23,500 |
| Perfluorocarbons | 3,000-50,000 | 5,000-8,000 | 7,000-11,000 |
| Black Carbon | days to weeks | 270-6,200 | 100-1,700 |
| Methane | 12 | 84 | 25 |
| Hydrofluorocarbons | Uncertain | 100-11,000 | 100-12,000 |

*Source: CARB, Climate Change Scoping Plan First Update, 2013.*
*Note: "Global Warming Potential" is a relative measure of how much heat a GHG traps in the atmosphere, as compared to $CO_2$.*

## Statewide GHG Emissions

The California Air Resources Board (CARB) compiles GHG inventories for the State of California. According to CARB's 2024 emission inventory,[35] 2022 emissions from GHG emitting activities statewide were 371.1 million metric tons of carbon dioxide equivalent ($MMTCO_2e$), 9.3 $MMTCO_2e$ lower than 2021 levels and 59.9 $MMTCO_2e$ below the 2020 GHG limit of 431 $MMTCO_2e$ established through AB 32 and CARB's subsequent Scoping Plans. The 2019 to 2020 decrease in emissions is likely due in large part to the impacts of the COVID-19 pandemic. Economic recovery from the pandemic may result in emissions increases over the next few years. As such, the total 2020 reported emissions are likely an anomaly, and any near-term increases in annual emissions should be considered in the context of the pandemic. The most notable highlights in the 2024 edition inventory include:

35 CARB, *California Greenhouse Gas Emissions for 2000 to 2022, Trends of Emissions and Other Indicators*, released September 20, 2024. Available online at: https://ww2.arb.ca.gov/sites/default/files/2024-09/nc-2000_2022_ghg_inventory_trends.pdf, accessed March 21, 2025.

- The transportation sector showed the largest decline in emissions of 5.2 $MMTCO_2e$ (3.6 percent) compared to 2021. The decrease in on-road transportation was due in large part to reduced use of fossil distillate (17.6 percent) and fossil gasoline (1.7 percent).

- Industrial sector emissions decreased by 1.5 $MMTCO_2e$ (2 percent) compared to 2021. The oil and gas production and processing sub-sector accounted for most of the decrease, with emissions decreasing by 0.9 $MMTCO_2e$ (7 percent).

- Electricity sector emissions decreased by 2.6 MMTCO2e (4.1 percent) compared to 2021. Total electricity generation increased by 8.5 TWh (2.7 percent) while the carbon intensity of generation decreased by 6.7 percent. Solar power generation increased by 8.8 TWh (14.5 percent) and wind power generation increased by 1.4 TWh (5.5 percent), incentivized by California's clean energy policies. Hydropower generation had a modest increase of 1.8 TWh (4.2 percent) as drought continued to impact hydropower generation. As a result, fossil gas-powered electricity generation decreased by 2.7 TWh (2.5 percent )

**Table 13, GHG Emissions in California**, provides a summary of GHG emissions reported in California in 2000 and 2022 separated by categories defined by the United Nations Intergovernmental Panel on Climate Change (IPCC).

**Table 13**
**GHG Emissions in California**

| Source Category | 2000 ($MMTCO_2e$) | Percent of Total | 2021 ($MMTCO_2e$) | Percent of Total |
|---|---|---|---|---|
| **Energy** | **405.8** | **87.7%** | **297.7** | **80.2%** |
| Energy Industries | 158.3 | -- | 97.1 | -- |
| Manufacturing Industries & Construction | 17.3 | -- | 12.7 | -- |
| Transport | 178.1 | -- | 140.9 | -- |
| Other Sectors (Residential/Commercial/Institutional) | 44.8 | -- | 38.9 | -- |
| Fugitive Emissions from Solid Fuels | 0.0 | -- | 0.0 | -- |
| Fugitive Emissions from Oil & Natural Gas | 6.1 | -- | 7.4 | -- |
| Fugitive Emissions from Geothermal Energy Production | 1.1 | -- | 0.8 | -- |
| Pollution Control Devices | 0.0 | -- | 0.0 | -- |
| **Industrial Processes & Product Use** | **19.6** | **4.2%** | **34.2** | **9.2%** |
| Mineral Industry | 5.6 | -- | 4.6 | -- |
| Chemical Industry | 0.1 | -- | 0.0 | -- |
| Metal Industry | 0.1 | | 0.0 | |
| Non-Energy Products from Fuels & Solvent Use | 2.5 | -- | 2.0 | -- |
| Electronics Industry | 0.5 | -- | 0.3 | -- |
| Substitutes for Ozone Depleting Substances | 5.6 | -- | 20.9 | -- |

| Source Category | 2000 ($MMTCO_2e$) | Percent of Total | 2021 ($MMTCO_2e$) | Percent of Total |
|---|---|---|---|---|
| Other Product Manufacture and Use | 1.5 | -- | 1.1 | -- |
| Other | 3.7 | -- | 5.2 | -- |
| **Agriculture, Forestry, & Other Land Use** | **28.4** | **6.1%** | **29.1** | **7.8%** |
| Livestock | 19.1 | -- | 20.9 | -- |
| Aggregate Sources & Non-$CO_2$ Sources on Land | 9.3 | -- | 8.2 | -- |
| **Waste** | **8.9** | **1.9%** | **10.1** | **2.7%** |
| Solid Waste Disposal | 6.6 | -- | 7.9 | -- |
| Biological Treatment of Solid Waste | 0.1 | -- | 0.3 | -- |
| Wastewater Treatment & Discharge | 2.1 | -- | 2.0 | -- |
| **Emissions Summary** | | | | |
| Gross California Emissions | **462.9** | | **371.1** | |

*Sources:*

[1] *CARB, California Greenhouse Gas Inventory for 2000-2022 - by IPCC Category. Last updated September 20, 2024. Available online at https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fww2.arb.ca.gov%2Fsites%2Fdefault%2Ffiles%2F2024-09%2Fnc-ghg_inventory_ipcc_sum_00-22.xlsx&wdOrigin=BROWSELINK, accessed March 21, 2025. 2022 is the most recent year of available data and the comparison to the year 2000 is intended to illustrate the changes in GHG emissions over a 22-year period.*

## 5.2 REGULATORY FRAMEWORK

### Federal

**Federal Clean Air Act.** The United States Environmental Protection Agency (U.S. EPA) is responsible for implementing federal policy to address GHGs. The United States Supreme Court (Supreme Court) ruled in *Massachusetts v. Environmental Protection Agency*, 127 S.Ct. 1438 (2007), that $CO_2$ and other GHGs are pollutants under the federal Clean Air Act (CAA), which the U.S. EPA must regulate if it determines they pose an endangerment to public health or welfare. In December 2009, U.S. EPA issued an endangerment finding for GHGs under the Clean Air Act, setting the stage for future regulation.

The Federal Government administers a wide array of public-private partnerships to reduce the GHG intensity generated in the United States. These programs focus on energy efficiency, renewable energy, methane and other non-$CO_2$ gases, agricultural practices, and implementation of technologies to achieve GHG reductions. U.S. EPA implements numerous voluntary programs that contribute to the reduction of GHG emissions. These programs (e.g., the ENERGY STAR labeling system for energy-efficient products) play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

**Corporate Average Fuel Economy (CAFE) Standards.** In response to the *Massachusetts v. Environmental Protection Agency* ruling, President George W. Bush issued Executive Order 13432 in 2007, directing the U.S. EPA, the United States Department of Transportation (U.S. DOT), and the United States Department of

Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. The National Highway Traffic Safety Administration (NHTSA) subsequently issued multiple final rules regulating fuel efficiency for and GHG emissions from cars and light-duty trucks for model year 2011 and later for model years 2012-2016, and 2017-2021. In March 2020, the U.S. DOT and the U.S. EPA issued the final Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule, which amends existing CAFE standards and tailpipe carbon dioxide emissions standards for passenger cars and light trucks and establishes new standards covering model years 2021 through 2026.[36] These standards set a combined fleet wide average of 36.9 to 37 for the model years affected.[37]

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011 the U.S. EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for $CO_2$ emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the U.S. EPA, this regulatory program would reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baselines. Building on the first phase of standards, in August 2016, the U.S. EPA and NHTSA finalized Phase 2 standards for medium and heavy-duty vehicles through model year 2027 that will improve fuel efficiency and cut carbon pollution. The Phase 2 standards are expected to lower $CO_2$ emissions by approximately 1.1 billion metric tons.[38]

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

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) that requires fuel producers to use at least 36 billion gallons of biofuel in 2022;

- Prescribing or revising standards affecting regional efficiency for heating and cooling products, procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances;

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36 U.S. Environmental Protection Agency, *Final Rule for Model Year 2021 - 2026 Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards*, April 30, 2020.

37 National Highway Traffic Safety Administration (NHTSA), *Corporate Average Fuel Economy standards.*

38 U.S. EPA, *EPA and NHTSA Adopt Standards to Reduce GHG and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles for Model Year 2018 and Beyond,* August 2016.

- Requiring approximately 25 percent greater efficiency for light bulbs by phasing out incandescent light bulbs between 2012 and 2014; requiring approximately 200 percent greater efficiency for light bulbs, or similar energy savings, by 2020; and

- While superseded by the U.S. EPA and NHTSA actions described above, (i) establishing miles per gallon targets for cars and light trucks and (ii) directing the NHTSA to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for trucks.

Additional provisions of EISA address energy savings in government and public institutions, promote research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."[39]

**Global Change Research Act (1990).** In 1990, Congress passed—and the President signed—Public Law 101-606, the Global Change Research Act.[40] The purpose of the legislation was: "...to require the establishment of a United States Global Change Research Program aimed at understanding and responding to global change, including the cumulative effects of human activities and natural processes on the environment, to promote discussions towards international protocols in global change research, and for other purposes." To that end, the Global Change Research Information Office was established in 1991 to serve as a clearinghouse of information. The Act requires a report to Congress every four years on the environmental, economic, health and safety consequences of climate change; however, the first and only one of these reports to date, the National Assessment on Climate Change, was not published until 2000. In February 2004, operational responsibility for GCRIO shifted to the U.S. Climate Change Science Program.

**National Fuel Efficiency Policy.** On May 19, 2009, the president announced a new National Fuel Efficiency Policy aimed at increasing fuel economy and reducing GHG pollution. This policy is expected to increase fuel economy by more than 5 percent by requiring a fleet-wide average of 35.5 miles per gallon by 2016 starting with model year 2012.

**Fuel Economy Standards**. On September 15, 2009, the U.S. EPA and the NHTSA issued a joint proposal to establish a national program consisting of new standards for model year 2012 through 2016 light-duty vehicles that will reduce GHG emissions and improve fuel economy. The proposed standards were to be phased in and require passenger cars and light-duty trucks to comply with a declining emissions standard.

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39 A green job, as defined by the United States Department of Labor, is a job in business that produces goods or provides services that benefit the environment or conserve natural resources.

40 Global Change Research Act (Public Law 101-606, 104 Stat. 3096-3104). 1990, available online at: https://www.govinfo.gov/content/pkg/STATUTE-104/pdf/STATUTE-104-Pg3096.pdf, accessed March 17, 2025.

In 2012, passenger cars and light-duty trucks were required to meet an average emissions standard of 295 grams of $CO_2$ per mile and 30.1 miles per gallon. By 2016, the vehicles were required to meet an average standard of 250 grams of $CO_2$ per mile and 35.5 miles per gallon. The final standards were adopted on April 1, 2010.

On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the CAA (42 United States Code Section 7521):

Endangerment Finding: The Administrator found that the current and projected concentrations of the six key well-mixed GHGs ($CO_2$, $CH_4$, $N_2O$, HFCs, PFCs, and $SF_6$) in the atmosphere threaten the public health and welfare of current and future generations.

Cause or Contribute Finding: The Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare.

While these findings do not impose additional requirements on industry or other entities, this action is a prerequisite to finalizing the U.S. EPA's proposed GHG emissions standards for light-duty vehicles, which were jointly proposed by the U.S. EPA and the NHTSA. On April 1, 2010, the U.S. EPA and the NHTSA issued final rules requiring that by the 2016 model-year, manufacturers must achieve a combined average vehicle emission level of 250 grams $CO_2$ per mile, which is equivalent to 35.5 miles per gallon as measured by U.S. EPA standards.

On November 16, 2011, U.S. EPA and NHTSA issued a joint proposal to extend the national program of harmonized GHG and fuel economy standards to model year (MY) 2017 through 2025 passenger vehicles. In August 2012, President Obama finalized standards that will increase fuel economy to the equivalent of 54.5 mpg for cars and light-duty trucks by MY 2025.

On January 12, 2017, the U.S. EPA Administrator Gina McCarthy signed her determination to maintain the GHG emissions standards for model year MY 2022-2025 vehicles. Her final determination found that automakers are well positioned to meet the standards at lower costs than previously estimated.[41]

On March 15, 2017, U.S. EPA Administrator Scott Pruitt (preceded by McCarthy) and Department of Transportation Secretary Elaine Chao announced that the U.S. EPA intended to reconsider the final

41 U.S. Environmental Protection Agency. *Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emissions Standards for Model Years 2022-2025*, available online at: https://www.epa.gov/regulations-emissions-vehicles-and-engines/midterm-evaluation-light-duty-vehicle-greenhouse-gas, accessed March 21, 2025.

determination, issued on January 12, 2017, that recommended no change to the greenhouse gas standards for light duty vehicles for model years 2022- 2025.[42]

On April 2, 2018, the Administrator Pruitt signed the Mid-term Evaluation Final Determination which finds that the model year 2022-2025 greenhouse gas standards are not appropriate in light of the record before U.S. EPA and, therefore, should be revised.[43]

On September 19, 2019, under the Safer, Affordable, Fuel-Efficient (SAFE) Vehicles Rule, the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHSTA) and the U.S. EPA issued the final "One National Program Rule." The rule states that federal law preempts state and local laws regarding tailpipe GHG emissions standards, zero emissions vehicle mandates, and fuel economy for automobiles and light duty trucks.

On September 20, 2019, a lawsuit was filed by California and a coalition of 22 other states, and the cities of Los Angeles, New York and Washington, D.C., in the United States District Court for the District of Columbia (Case 1:19-cv-02826) challenging the SAFE Rule and arguing that EPA lacks the legal authority to withdraw the California waiver. In April 2021, the U.S. EPA announced it would reconsider its previous withdrawal and grant California permission to set more stringent climate requirements for cars and SUVs. On March 9, 2022, the U.S. EPA restored California's 2013 waiver to full force, including both its GHG standards and zero-emissions vehicles sales requirements.

**Executive Order 13693.** Issued on June 10, 2015, Executive Order 13693 — Planning for Federal Sustainability in the Next Decade. The goal of Executive Order 13693 is to maintain federal leadership in sustainability and GHG emission reductions. This Executive Order outlines forward-looking goals for federal agencies in the area of energy, climate change, water use, vehicle fleets, construction, and acquisition. Federal agencies shall, where life-cycle cost-effective, beginning in 2016:

- Reduce agency building energy intensity as measured in British Thermal Units per square foot by 2.5 percent annually through 2025;
- Improve data center energy efficiency at agency buildings;
- Ensure a minimum percentage of total building electric and thermal energy shall be from clean energy sources;

42 *Ibid.*

43 *Ibid.*

- Improve agency water use efficiency and management (including storm water management); and
- Improve agency fleet and vehicle efficiency and management by achieving minimum percentage GHG emission reductions.

**Executive Order 13783.** Issued on March 28, 2017, Executive Order 13783 — Promoting Energy Independence and Economic Growth — revokes multiple prior Executive Orders and memoranda including Executive Order 13653, the Power Sector Carbon Pollution Standards, Presidential Memorandum – Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment, and Presidential Memorandum – Climate Change and National Security, as well as other federal reports and provisions. Executive Order 13783 represents a reversal on federal climate policy relative to the work of previous administrations and its objective is to reduce the regulatory framework applicable to GHG emissions to spur fossil fuel production. This Executive Order "established a national policy to promote the clean and safe development of our energy resources while reducing unnecessary regulatory burdens" (Federal Register 2017).[44] The order also "directs the U.S. EPA to review existing regulations, orders, guidance documents and policies that potentially burden the development or use of domestically produced energy resources." As of April 2020, the Council on Environmental Quality (CEQ) is considering updating its National Environmental Policy (NEPA) implementing regulations and has issued a Notice of Proposed Rulemaking that incorporates Executive Order 13783.[45] How these proposed rule changes will affect GHG emissions cannot be predicted at this time.

**Executive Order 13795.** Issued on April 28, 2017, Executive Order 13795 — Implementing an America-First Offshore Energy Strategy — directs the "policy of the United States to encourage energy exploration and production, including on the Outer Continental Shelf, in order to maintain the Nation's position as a global energy leader and foster energy security and resilience for the benefit of the American people, while ensuring that any such activity is safe and environmental responsible."[46] The objective of the order is to expand the opportunity for offshore energy development by removing restrictions on resource exploration and extraction. This Executive Order prioritizes the development of offshore energy resources over the protection of National Marine Sanctuaries and authorizes the review and potential revision or withdrawal of the Bureau of Ocean Energy Management's Proposed Rule entitled "Air Quality Control, Reporting, and Compliance," 81 Federal Register 19718 and any other related rules and guidance. The implications of

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44 Federal Register, *Executive Order 13783 of March 28, 2017: Promoting Energy Independence and Economic Growth, Vol. 82, No. 61*, March 21, 2017.

45 Council on Environmental Quality, *CEQ NEPA Regulations*, 2020.

46 Federal Register, *Executive Order 13783 of March 28, 2017: Promoting Energy Independence and Economic Growth, Vol. 82, No. 61*, March 21, 2017.

implementing Executive Order 13795 with regards to the national GHG emissions inventory cannot be reasonably determined at this time.

## State

**California Air Resources Board.** The California Air Resources Board (CARB), a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets the California Ambient Air Quality Standards (CAAQS), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the Federal Government and the local air districts. The SIP is required for the state to take over implementation of the Federal Clean Air Act. CARB also has primary responsibility for adopting regulations to meet the state's goal of reducing GHG emissions. The state has met its goals to reduce GHG emissions to 1990 levels by 2020. Subsequent state goals include reducing GHG emissions to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050.

**Statewide GHG Reduction Targets.** Executive Order S-3-05, Assembly Bill 32, Senate Bill 32, Assembly Bill 1279, Executive Order B-55-18, Cap-and-Trade Program, Senate Bill 350, Senate Bill 1383, Senate Bill 97, Senate Bill 375, Emission Performance Standards, Renewable Portfolio Standards (SB 1078, SB 107, SB X 1-2, and SB 100), Assembly Bill 1493, Low Carbon Fuel Standard (Executive Order S-01-07), Advanced Clean Cars Program, Senate Bill 743, California Integrated Waste Management Act (AB 341), California Appliance Efficiency Regulations, California Green Building Code (California Code of Regulations Title 24).

**Executive Order S-3-05.** Executive Order S-3-05, issued in June 2005, established GHG emissions targets for the state, as well as a process to ensure the targets are met. The order directed the Secretary for the CalEPA to report every two years on the state's progress toward meeting the Governor's GHG emission reduction targets. As a result of this executive order, the California Climate Action Team (CCAT), led by the Secretary of the CalEPA, was formed. The CCAT is made up of representatives from a number of state agencies and was formed to implement global warming emission reduction programs and reporting on the progress made toward meeting statewide targets established under the Executive Order. The CCAT reported several recommendations and strategies for reducing GHG emissions and reaching the targets established in the Executive Order (CalEPA 2006). The statewide GHG targets are as follows:

- By 2010, reduce to 2000 emission levels;
- By 2020, reduce to 1990 emission levels; and
- By 2050, reduce to 80 percent below 1990 levels.

However, with the adoption of the California Global Warming Solutions Act of 2006 (also known as Assembly Bill [AB] 32), discussed below, the Legislature did not adopt the 2050 horizon-year goal from Executive Order No. S-3-05. In the last legislative session, the Legislature rejected legislation to enact the Executive Order's 2050 goal.[47]

The original mandate for the CCAT was to develop proposed measures to meet the emission reduction targets set forth in E.O. S-3-05. The CCAT has since expanded and currently has members from 18 state agencies and departments. The CCAT also has ten working groups, which coordinate policies among their members. The working groups and their major areas of focus are:

- **Agriculture:** Focusing on opportunities for agriculture to reduce GHG emissions through efficiency improvements and alternative energy projects, while adapting agricultural systems to climate change;

- **Biodiversity:** Designing policies to protect species and natural habitats from the effects of climate change;

- **Energy:** Reducing GHG emissions through extensive energy efficiency policies and renewable energy generation;

- **Forestry:** Coupling GHG mitigation efforts with climate change adaptation related to forest preservation and resilience, waste to energy programs and forest offset protocols;

- **Land Use and Infrastructure:** Linking land use and infrastructure planning to efforts to reduce GHG from vehicles and adaptation to changing climatic conditions;

- **Oceans and Coastal:** Evaluating the effects of sea level rise and changes in coastal storm patterns on human and natural systems in California;

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47 The original version of SB 32 as introduced in the Legislature contained a commitment to the 2050 goal, but this commitment was not included in the final version of the bill.
See: *https://leginfo.legislature.ca.gov/faces/billVersionsCompareClient.xhtml?bill_id=201520160SB32&cversion=20150SB3299INT*. In addition, the Supreme Court recently held in Cleveland National Forest Foundation et al. v San Diego Association of Governments (SANDAG) (S223603, July 13, 2017) that SANDAG did not abuse its discretion in declining to adopt the 2050 goal as a measure of significance in an analysis of the consistency of projected 2050 GHG emissions with the goals in Executive Order S-3-05.

- **Public Health:** Evaluating the effects of GHG mitigation policies on public health and adapting public health systems to cope with changing climatic conditions;
- **Research:** Coordinating research concerning impacts of and responses to climate change in California;
- **State Government:** Evaluating and implementing strategies to reduce GHG emissions resulting from state government operations; and
- **Water:** Reducing GHG impacts associated with the state's water.

The CCAT stated that smart land use is an umbrella term for strategies that integrate transportation and land-use decisions. Such strategies generally encourage jobs/housing proximity, transit-oriented development, and high-density residential/commercial development along transit corridors. These strategies develop more efficient land-use patterns within each jurisdiction or region to match population growth and workforce and socioeconomic needs for the full spectrum of the population. "Intelligent transportation systems" involve the application of advanced technology systems and management strategies to improve operational efficiency of transportation systems and the movement of people, goods, and service.[48]

**Assembly Bill 32.** The California Global Warming Solutions Act of 2006 (AB 32) was signed into law in September 2006 after considerable study and expert testimony before the Legislature. The law instructs CARB to develop and enforce regulations for the reporting and verifying of statewide GHG emissions. AB 32 directed CARB to set a GHG emission limit based on 1990 levels to be achieved by 2020. AB 32 set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.[49] See the **Climate Change Scoping Plan** subsection below.

The heart of AB 32 is the requirement to reduce statewide GHG emissions to 1990 levels by 2020. AB 32 required CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. CARB accomplished the key milestones set forth in AB 32, including the following:

48 California Environmental Protection Agency, *Climate Action Team Report to Governor Schwarzenegger and the Legislature*, 2006,

49 Office of Legislative Counsel of California, *The California Global Warming Solutions Act of 2006 (AB 32)*, 2006.

- June 30, 2007. Identification of discrete early action GHG emissions reduction measures. On June 21, 2007, CARB satisfied this requirement by approving three early action measures.[50] These were later supplemented by adding six other discrete early action measures.[51]

- January 1, 2008. Identification of the 1990 baseline GHG emissions level and approval of a statewide limit equivalent to that level and adoption of reporting and verification requirements concerning GHG emissions. On December 6, 2007, CARB approved a statewide limit on GHG emissions levels for the year 2020 consistent with the determined 1990 baseline.[52]

- January 1, 2009. Adoption of a scoping plan for achieving GHG emission reductions. On December 11, 2008, CARB adopted Climate Change Scoping Plan: A Framework for Change (Scoping Plan).[53]

- January 1, 2010. Adoption and enforcement of regulations to implement the "discrete" actions. Several early action measures have been adopted and became effective on January 1, 2010. [54,55]

- January 1, 2011. Adoption of GHG emissions limits and reduction measures by regulation. On October 28, 2010, CARB released its proposed cap-and-trade regulations, which would cover sources of approximately 85 percent of California's GHG emissions.[56] CARB's Board ordered its Executive Director to prepare a final regulatory package for cap-and-trade on December 16, 2010.[57]

- January 1, 2012. GHG emissions limits and reduction measures adopted in 2011 became enforceable.

**Executive Order B-30-15.** On April 29, 2015, Governor Brown issued Executive Order B-30-15. Therein, the Governor directed the following:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030.

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50 CARB, *Consideration of Recommendations for Discrete Early Actions for Climate Change Mitigation in California*, 2007.

51 CARB, *Public Meeting to Consider Approval of Additions to the List of Early Action Measures to Reduce Greenhouse Gas Emissions under the California Global Warming Solutions Act of 2006 and to Discuss Concepts for Promoting and Recognizing Voluntary Early Actions*, 2007.

52 CARB, *California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit*, 2007.

53 CARB, *Climate Change Scoping Plan*, 2008.

54 CARB, *Consideration of Recommendations for Discrete Early Actions for Climate Change Mitigation in California*, 2007.

55 CARB, *Public Meeting to Consider Approval of Additions to the List of Early Action Measures to Reduce Greenhouse Gas Emissions under the California Global Warming Solutions Act of 2006 and to Discuss Concepts for Promoting and Recognizing Voluntary Early Actions*, 2007.

56 CARB, *Cap and Trade 2010,* 2011.

57 CARB, *California Cap-and-Trade Program, Resolution 10-42*, 2010.

- Ordered all state agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets.

- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent.

**Senate Bill 32.** In 2016, the Legislature passed Senate Bill (SB) 32 with the companion bill Assembly Bill (AB) 197, which further requires California to reduce GHG emissions to 40 percent below 1990 levels by 2030. The bill targets reductions from the leading GHG emitters in the state. Transportation is the largest sector of GHG emissions in California and will be a primary subject for reductions. Through advances in technology and improved public transportation, the state plans to reduce GHG emissions from transportation sources to assist in meeting the 2030 reduction goal. AB 197, signed September 8, 2016, is a bill linked to SB 32 and signed on September 8, 2016, prioritizes efforts to cut GHG emissions in low-income or minority communities. AB 197 requires CARB to make available, and update at least annually, on its website the emissions of GHGs, criteria pollutants, and toxic air contaminants for each facility that reports to CARB and air districts. In addition, AB 197 adds two Members of the Legislature to the CARB board as ex officio, non- voting members and creates the Joint Legislative Committee on Climate Change Policies to ascertain facts and make recommendations to the Legislature and the houses of the Legislature concerning the state's programs, policies, and investments related to climate change.

**Executive Order B-55-18.** On September 10, 2018, the governor issued Executive Order 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.

**AB 1279.** On September 16, 2022, California signed into law AB 1279 (The California Climate Crisis Act) which establishes the policy of the state to achieve carbon neutrality as soon as possible, but no later than 2045; to maintain net negative GHG emissions thereafter; and to ensure that by 2045 statewide anthropogenic GHG emissions are reduced at least 85 percent below 1990 levels. The bill requires CARB to ensure that Scoping Plan updates (see below) identify and recommend measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable $CO_2$ removal solutions and carbon capture, utilization, and storage (CCUS) technologies.

**Cap-and-Trade Program.** As mentioned above, the Scoping Plan identifies a cap-and-trade program as one of the strategies the State will employ to reduce GHG emissions that cause climate change. The cap-and-trade program is implemented by CARB and "caps" GHG emissions from the industrial, utility, and transportation fuels sections, which account for roughly 85 percent of the state's GHG emissions. The

program works by establishing a hard cap on about 85 percent of total statewide GHG emissions. The cap starts at expected business-as-usual emissions levels in 2012 and declines 2 percent to 3 percent per year. Originally with a planning horizon of 2020, the approval of AB 398 in July 2017 extended the program until 2030.

With the passage of AB 1279, the State has a statutory target to achieve carbon neutrality no later than 2045. The 2022 Scoping Plan demonstrates that planning on a longer time frame for the new carbon neutrality target means we must accelerate our near-term ambition for 2030 in order to be on track to achieve our longer-term target. CARB will use the modeling from the 2022 Scoping Plan to assess what changes may be warranted to the Cap-and-Trade or other programs to ensure we are on track to achieve an accelerated 2030 target. Since the original adoption of the Cap-and-Trade regulation, the program has been amended eight times through a robust public process. Moreover, then-California Environmental Protection Agency Secretary Jared Blumenfeld testified at a Senate hearing in 2022 that CARB will report back to the Legislature by the end of 2023 on the status of the allowance supply with any suggestions on legislative changes to ensure the number of allowances is appropriate to help the state achieve its 2030 target of at least 40 percent below 1990 levels. As part of that status update, CARB will also provide information on any potential program changes that may be needed to allowance supply to help achieve an accelerated target for 2030 identified in the 2022 Scoping Plan as necessary to achieve carbon neutrality no later than 2045.

**Senate Bill 350.** Adopted on October 7, 2015, SB 350 supports the reduction of GHG emissions from the electricity sector through a number of measures, including requiring electricity providers to achieve a 50 percent renewables portfolio standard by 2030, a cumulative doubling of statewide energy efficiency savings in electricity and natural gas by retail customers by 2030.

**Senate Bill 1383.** Approved by the governor in September 2016, SB 1383 requires the CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. The bill 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

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

**Senate Bill 97.** Per SB 97, which was signed into law in 2007, the California Natural Resources Agency adopted amendments to the *State CEQA Guidelines*, which address the specific obligations of public agencies when analyzing GHG emissions under CEQA to determine a project's effects on the environment (codified as Public Resources Code [PRC] 21083.05). Specifically, PRC 21083.05 states, "[t]he Office of Planning and Research and the Natural Resources Agency shall periodically update the guidelines for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions."

**Sustainable Communities and Climate Protection Act (Senate Bill 375).** The Sustainable Communities and Climate Protection Act of 2008, or SB 375 (Chapter 728, Statutes of 2008), which establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions, was adopted by the State on September 30, 2008. SB 375 finds that the "transportation sector is the single largest contributor of greenhouse gases of any sector."[58] Under SB 375, the target must be incorporated within that region's Regional Transportation Plan (RTP), which is used for long-term transportation planning, in a Sustainable Communities Strategy (SCS). Certain transportation planning and programming activities would then need to be consistent with the SCS; however, SB 375 expressly provides that the SCS does not regulate the use of land, and further provides that local land use plans and policies (e.g., general plans) are not required to be consistent with either the RTP or SCS. Under SB 375, CARB is required, in consultation with the Metropolitan Planning Organizations, to set regional GHG reduction targets for the passenger vehicle and light-duty truck sector for 2020 and 2035. The Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC) are responsible for regional planning of the San Francisco Bay Area, which includes the City of San Rafael. These agencies are responsible for developing the long-range regional transportation plan, known as the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS); the Final Plan Bay Area 2050, was adopted in October of 2021 and is the RTP/SCS for the region.[59]

**Emission Performance Standards.** SB 1368, signed September 29, 2006, is a companion bill to AB 32, which requires the California Public Utilities Commission and the California Energy Commission (CEC) to establish GHG emission performance standards for the generation of electricity. These standards also generally apply to power that is generated outside of California and imported into the state. SB 1368 provides a mechanism for reducing the emissions of electricity providers, thereby assisting CARB to meet its mandate under AB 32.

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58 State of California, *Senate Bill No. 375*, September 30, 2008.

59 ABAG, MTC, *Plan Bay Area 2050,* October 21, 2021. Available online at: https://planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021.pdf, accessed March 24, 2025.

**Renewable Portfolio Standards (SB 1078, SB 107, SB X 1-2, and SB 100).** Established in 2002 under SB 1078, and accelerated in 2006 under SB 107, in 2011 under SB X 1-2, and again in 2018 under SB 100, California's Renewable Portfolio Standards (RPS) require retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 44 percent by 2024, 52 percent by 2027, and 60 percent in 2030.[60,61] Additionally, the state has made a commitment that renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity by 2045.[62] Initially, the RPS provisions applied to investor-owned utilities, community choice aggregators, and electric service providers. SB X 1-2 added, for the first time, publicly owned utilities to the entities subject to RPS.

**Assembly Bill 1493.** Mobile Source Reductions Assembly Bill 1493, the "Pavley Standard," required CARB to adopt regulations by January 1, 2005, to reduce GHG emissions from non-commercial passenger vehicles and light-duty trucks of model year 2009 through 2016. The bill also required the California Climate Action Registry to develop and adopt protocols for the reporting and certification of GHG emissions reductions from mobile sources for use by CARB in granting emission reduction credits. The bill authorizes CARB to grant emission reduction credits for reductions of GHG emissions prior to the date of enforcement of regulations, using model year 2000 as the baseline for reduction.[63] In 2004, CARB applied to the U.S. Environmental Protection Agency (U.S. EPA) for a waiver under the federal Clean Air Act to authorize implementation of these regulations. On June 30, 2009, the U.S. EPA granted the waiver with the following provision: CARB may not hold a manufacturer liable or responsible for any noncompliance caused by emission debits generated by a manufacturer for the 2009 model year. CARB has adopted a new approach to passenger vehicles (cars and light trucks), by combining the control of smog-causing pollutants and GHG emissions into a single coordinated package of standards. The new approach also includes efforts to support and accelerate the numbers of plug-in hybrids and zero-emission vehicles in California.

**Low Carbon Fuel Standard (Executive Order S-01-07).** Executive Order S-01-07 (January 18, 2007) requires a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by CARB. CARB identified the Low Carbon Fuel Standard (LCFS) as a Discrete Early Action item under AB 32, and the final resolution (09-31) was issued on April 23, 2009.[64] In 2009, CARB approved for adoption the LCFS regulation, which became fully effective in April 2010 and is codified at Title 17, California Code of Regulations (CCR), Sections 95480-95490. The LCFS reduced GHG emissions by

60 Office of Legislative Counsel of California, *Senate Bill 1078*, 2002.

61 Office of Legislative Counsel of California, *Senate Bill 1368*, 2006.

62 Office of Legislative Counsel of California, *Clean Car Standards – Pavley, Assembly Bill 1493*, 2018.

63 CARB, *Clean Car Standards – Pavley, Assembly Bill 1493*, 2017.

64 CARB, *Initial Statement of Reasons for Proposed Regulation for the Management of High Global Warming Potential Refrigerants for Stationary Sources*, 2009.

reducing the carbon intensity of transportation fuels used in California by 10 percent between 2011 and 2020. In 2018, CARB approved amendments to LCFS regulations, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector.

**Advanced Clean Cars Program.** In 2012, CARB approved the Advanced Clean Cars Program, a new emissions-control program for model year 2017 through 2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emission vehicles. By 2025, when the rules will be fully implemented, the new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

**Senate Bill 743 (SB 743).** SB 743, adopted September 27, 2013, encourages land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT), which contribute to GHG emissions, as required by AB 32. Key provisions of SB 743 include reforming aesthetics and parking CEQA analysis for certain urban infill projects and eliminating the measurement of auto delay, including level of service (LOS), as a metric that can be used for measuring traffic impacts in transit priority areas. SB 743 requires the Governor's Office of Planning and Research (OPR) to develop revisions to the *State CEQA Guidelines* establishing criteria for determining the significance of transportation impacts of projects within transit priority areas that promote the "…reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses." It also allows OPR to develop alternative metrics outside of transit priority areas. In December 2018, the Natural Resources Agency updated the *State CEQA Guidelines* and provided guidance for implementing SB 743.

**California Integrated Waste Management Act (AB 341).** The California Integrated Waste Management Act of 1989, as modified by AB 341, requires each jurisdiction's source reduction and recycling element to include an implementation schedule that shows: diversion of 25 percent of all solid waste by January 1, 1995, through source reduction, recycling, and composting activities; diversion of 50 percent of all solid waste on and after January 1, 2000; and diversion of 75 percent of all solid waste by 2020, and annually thereafter.

**California Appliance Efficiency Regulations.** The Appliance Efficiency Regulations (Title 20, Sections 1601 through 1608), adopted by the CEC, include standards for new appliances (e.g., refrigerators) and lighting, if they are sold or offered for sale in California. These standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances.

**California Green Building Code (California Code of Regulations Title 24).** Although not originally aimed at reducing GHG emissions, CCR Title 24 Part 6: *California's Energy Efficiency Standards for Residential and Nonresidential Buildings* (Title 24), was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. Since then, Title 24 has been amended to recognize that energy-efficient buildings require less electricity and reduce fuel consumption, which subsequently reduces GHG emissions. The current 2022 Title 24 standards were adopted, among other reasons, to respond to the requirements of AB 32. Specifically, new development projects constructed within California after January 1, 2023, are subject to the mandatory planning and design, energy efficiency, water efficiency and conservation, material conservation and resources efficiency, and environmental quality measures of the California Green Building Standards (CALGreen) Code (CCR Title 24, Part 11). Title 24 standards are updated triennially; the next update is scheduled to be adopted in 2025 and will take effect on January 1, 2026.

**CEQA Guidelines.** In August 2007, the California State Legislature adopted Senate Bill 97 (SB 97) (Chapter 185, Statutes of 2007), requiring OPR to prepare and transmit new *State CEQA Guidelines* for the mitigation of GHG emissions or the effects of GHG emissions to the Resources Agency by July 1, 2009. In response to SB 97, OPR adopted *State CEQA Guidelines* that became effective on March 18, 2010.

However, neither a threshold of significance nor any specific mitigation measures are included or provided in the guidelines.[65] The guidelines require a lead agency to make a good-faith effort, based on the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. Discretion is given to the lead agency whether to: (1) use a model or methodology to quantify GHG emissions resulting from a project, and which model or methodology to use; or (2) rely on a qualitative analysis or performance-based standards. Furthermore, three factors are identified that should be considered in the evaluation of the significance of GHG emissions:

1. The extent to which a project may increase or reduce GHG emissions as compared to the existing environmental setting;

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and

[65] See 14 Cal. Code Regs. §§ 15064.7 (generally giving discretion to lead agencies to develop and publish thresholds of significance for use in the determination of the significance of environmental effects), 15064.4 (giving discretion to lead agencies to determine the significance of impacts from GHGs).

3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.[66]

The administrative record for the Guidelines Amendments also clarifies "that the effects of greenhouse gas emissions are cumulative and should be analyzed in the context of California Environmental Quality Act's requirements for cumulative impact analysis."[67]

**Senate Bill 1 (SB 1) and Senate Bill 1017 (SB 1017) (Million Solar Roofs).** SB 1 and SB 1017, enacted in August 2006, set a goal to install 3,000 megawatts of new solar capacity by 2017 with a stated intent to move the state toward a cleaner energy future and help lower the cost of solar systems for consumers. The Million Solar Roofs Program is a ratepayer-financed incentive program aimed at transforming the market for rooftop solar systems by driving down costs over time. It provides up to $3.3 billion in financial incentives that decline over time.

**GHG Emissions Standards for Baseload Generation.** SB 1368, which was signed into law on September 29, 2006, prohibits any retail seller of electricity in California from entering into a long-term financial commitment for baseload generation if the GHG emissions are higher than those from a combined-cycle natural gas power plant. This performance standard (i.e., reducing long-term GHG emissions as a result of electrical baseload generation) applies to electricity generated both within and outside of California, and to publicly owned, as well as investor-owned, electric utilities.

**Senate Bill 350 (SB 350).** Adopted on October 7, 2015, SB 350 supports the reduction of GHG emissions from the electricity sector through a number of measures, including requiring electricity providers to achieve a 50 percent renewable portfolio standard by 2030, a cumulative doubling of statewide energy efficiency savings in electricity and natural gas by retail customers by 2030.

**Climate Change Scoping Plan.** The Scoping Plan is a GHG reduction roadmap developed and updated by CARB at least once every five years, as initially required by AB 32. It lays out the transformations needed across various sectors to reduce GHG emissions and reach the State's climate targets. CARB adopted the Final 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan Update) in December 2022 as the third update to the initial plan that was adopted in 2008. The initial 2008 Scoping Plan laid out a path to achieve the AB 32 target of returning to 1990 levels of GHG emissions by 2020, a reduction of approximately 15 percent below business-as-usual activities.[68] The 2008 Scoping Plan included a mix of

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66 14 Cal. Code Regs. § 15064.4(b).

67 Letter from Cynthia Bryant, Director of the Governor's Office of Planning and Research to Mike Chrisman, California Secretary for Natural Resources, dated April 13, 2009.

68 CARB, *Climate Change Scoping Plan*, 2008.

incentives, regulations, and carbon pricing, laying out the portfolio approach to addressing climate change and clearly making the case for using multiple tools to meet California's GHG targets. The 2013 Scoping Plan Update (adopted in 2014) assessed progress toward achieving the 2020 target and made the case for addressing short-lived climate pollutants (SLCPs).[69] The 2017 Scoping Plan Update,[70] shifted focus to the newer SB 32 goal of a 40 percent reduction below 1990 levels by 2030 by laying out a detailed cost-effective and technologically feasible path to this target, and also assessed progress towards achieving the AB 32 goal of returning to 1990 GHG levels by 2020. The 2020 goal was ultimately reached in 2016, four years ahead of the schedule called for under AB 32.

The 2022 Scoping Plan Update is the most comprehensive and far-reaching Scoping Plan developed to date.[71] It identifies a technologically feasible, cost-effective, and equity-focused path to achieve new targets for carbon neutrality by 2045 and to reduce anthropogenic GHG emissions to at least 85 percent below 1990 levels, while also assessing 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.[72] The 2030 target is an interim but important stepping stone along the critical path to the broader goal of deep decarbonization by 2045. The relatively longer path assessed in the 2022 Scoping Plan Update incorporates, coordinates, and leverages many existing and ongoing efforts to reduce GHGs and air pollution, while identifying new clean technologies and energy. Given the focus on carbon neutrality, the 2022 Scoping Plan Update also includes discussion for the first time of the natural and working lands sectors as sources for both sequestration and carbon storage, and as sources of emissions as a result of wildfires. See **Table 14, Estimated Statewide Greenhouse Gas Emissions Reductions in the 2022 Scoping Plan**, below.

69 CARB, *First Update to the Climate Change Scoping Plan*, 2014.

70 CARB, *California's 2017 Climate Change Scoping Plan*, 2017. Available online at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf. accessed October 2, 2023.

71 CARB, *2022 Scoping Plan for Achieving Carbon Neutrality*, 2022. Available online at: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf, accessed April 30, 2025.

72 CARB, *California's 2017 Climate Change Scoping Plan*, 2017. Available online at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf. accessed March 17, 2025.

**Table 14**
**Estimated Statewide Greenhouse Gas Emissions Reductions in the 2022 Scoping Plan**

| Emissions Scenario | GHG Emissions ($MMTCO_2e$) |
|---|---|
| **2019** | |
| 2019 State GHG Emissions | 404 |
| **2030** | |
| 2030 BAU Forecast | 312 |
| 2030 GHG Emissions without Carbon Removal and Capture | 233 |
| 2030 GHG Emissions with Carbon Removal and Capture | 226 |
| 2030 Emissions Target Set by AB 32 (i.e., 1990 level by 2030) | 260 |
| Reduction below Business-As-Usual necessary to achieve 1990 levels by 2030 | 52 (16.7%) [a] |
| **2045** | |
| 2045 BAU Forecast | 266 |
| 2045 GHG Emissions without Carbon Removal and Capture | 72 |
| 2045 GHG Emissions with Carbon Removal and Capture | (3) |

*Note: $MMTCO_2e$ = million metric tons of carbon dioxide equivalents; parenthetical numbers represent negative values.*
*[a] 312 – 260 = 52. 52 / 312 = 16.7%*
*Source: CARB, November 2022, Final 2022 Climate Change Scoping Plan.*

The 2022 Scoping Plan Update reflects existing and recent direction in the Governor's Executive Orders and State Statutes, which identify policies, strategies, and regulations in support of and implementation of the Scoping Plan. Among these include Executive Order B-55-18 and AB 1279 (The California Climate Crisis Act), which identify the 2045 carbon neutrality and GHG reduction targets required for the Scoping Plan. **Table 15** below provides a summary of major climate legislation and executive orders issued since the adoption of the 2017 Scoping Plan.

**Table 15**
**Major Climate Legislation and Executive Orders Enacted Since the 2017 Scoping Plan**

| Bill/Executive Order | Summary |
|---|---|
| **Assembly Bill 1279 (AB 1279) (Muratsuchi, Chapter 337, Statutes of 2022)**<br>*The California Climate Crisis Act* | AB 1279 establishes the policy of the state to achieve carbon neutrality as soon as possible, but no later than 2045; to maintain net negative GHG emissions thereafter; and to ensure that by 2045 statewide anthropogenic GHG emissions are reduced at least 85% below 1990 levels. The bill requires CARB to ensure that the Scoping Plan updates identify and recommend measures to achieve carbon neutrality, and to identify and implement policies and strategies that enable $CO_2$ removal solutions and carbon capture, utilization, and storage (CCUS) technologies.<br>This bill is reflected directly in the 2022 Scoping Plan Update. |

| Bill/Executive Order | Summary |
|---|---|
| **Senate Bill 905 (SB 905) (Caballero, Chapter 359, Statutes of 2022)**<br>*Carbon Capture, Removal, Utilization, and Storage Program* | SB 905 requires CARB to create the Carbon Capture, Removal, Utilization, and Storage Program to evaluate, demonstrate, and regulate CCUS and carbon dioxide removal (CDR) projects and technology.<br>The bill requires CARB, on or before January 1, 2025, to adopt regulations creating a unified state permitting application for approval of CCUS and CDR projects. The bill also requires the Secretary of the Natural Resources Agency to publish a framework for governing agreements for two or more tracts of land overlying the same geologic storage reservoir for the purposes of a carbon sequestration project.<br>The 2022 Scoping Plan Update modeling reflects both CCUS and CDR contributions to achieve carbon neutrality. |
| **Senate Bill 846 (SB 846) (Dodd, Chapter 239, Statutes of 2022)**<br>*Diablo Canyon Powerplant: Extension of Operations* | SB 846 extends the Diablo Canyon Power Plant's sunset date by up to five additional years for each of its two units and seeks to make the nuclear power plant eligible for federal loans. The bill requires that the California Public Utilities Commission (CPUC) not include and disallow a load-serving entity from including in their adopted resource plan, the energy, capacity, or any attribute from the Diablo Canyon power plant.<br>The 2022 Scoping Plan Update explains the emissions impact of this legislation. |
| **Senate Bill 1020 (SB 1020) (Laird, Chapter 361, Statutes of 2022)**<br>*Clean Energy, Jobs, and Affordability Act of 2022* | SB 1020 adds interim renewable energy and zero carbon energy retail sales of electricity targets to California end-use customers set at 90% in 2035 and 95% in 2040. It accelerates the timeline required to have 100% renewable energy and zero carbon energy procured to serve state agencies from the original target year of 2045 to 2035. This bill requires each state agency to individually achieve the 100% goal by 2035 with specified requirements. This bill requires the CPUC, California Energy Commission (CEC), and CARB, on or before December 1, 2023, and annually thereafter, to issue a joint reliability progress report that reviews system and local reliability.<br>The bill also modifies the requirement for CARB to hold a portion of its Scoping Plan workshops in regions of the state with the most significant exposure to air pollutants by further specifying that this includes communities with minority populations or low-income communities in areas designated as being in extreme federal non-attainment.<br>The 2022 Scoping Plan Update describes the implications of this legislation on emissions. |
| **Senate Bill 1137 (SB 1137) (Gonzales, Chapter 365, Statutes of 2022)**<br>*Oil & Gas Operations: Location Restrictions: Notice of Intention: Health protection zone: Sensitive receptors* | SB 1137 prohibits the development of new oil and gas wells or infrastructure in health protection zones, as defined, except for purposes of public health and safety or other limited exceptions. The bill requires operators of existing oil and gas wells or infrastructure within health protection zones to undertake specified monitoring, public notice, and nuisance requirements. The bill requires CARB to consult and concur with the California Geologic Energy Management Division (CalGEM) on leak detection and repair plans for these facilities, adopt regulations as necessary to implement emission detection system standards, and collaborate with CalGEM on public access to emissions detection data. |
| **Senate Bill 1075 (SB 1075) (Skinner, Chapter 363, Statutes of 2022)**<br>*Hydrogen: Green Hydrogen: Emissions of Greenhouse Gases* | SB 1075 requires CARB, by June 1, 2024, to prepare an evaluation that includes: policy recommendations regarding the use of hydrogen, and specifically the use of green hydrogen, in California; a description of strategies supporting hydrogen infrastructure, including identifying policies that promote the reduction of GHGs and short-lived climate pollutants; a description of other forms of hydrogen to achieve emission reductions; an analysis of curtailed electricity; an estimate of GHG and emission reductions that could be achieved through deployment of green hydrogen through a variety of scenarios; an analysis of the potential for opportunities to integrate hydrogen production and applications with drinking water supply treatment needs; policy recommendations for regulatory and permitting processes associated with transmitting and distributing hydrogen from production sites to end uses; an analysis of the life-cycle GHG emissions from various forms of hydrogen production; and an analysis of air pollution and other environmental impacts from hydrogen distribution and end uses.<br>This bill would inform the production of hydrogen at the scale called for in the 2022 Scoping Plan Update. |

| Bill/Executive Order | Summary |
|---|---|
| **Assembly Bill 1757 (AB 1757) (Garcia, Chapter 341, Statutes of 2022)**<br><br>*California Global Warming Solutions Act of 2006: Climate Goal: Natural and Working Lands* | AB 1757 requires the California Natural Resources Agency (CNRA), in collaboration with CARB, other state agencies, and an expert advisory committee, to determine a range of targets for natural carbon sequestration, and for nature-based climate solutions, which reduce GHG emissions in 2030, 2038, and 2045 by January 1, 2024. These targets must support state goals to achieve carbon neutrality and foster climate adaptation and resilience.<br><br>This bill also requires CARB to develop standard methods for state agencies to consistently track GHG emissions and reductions, carbon sequestration, and additional benefits from natural and working lands over time. These methods will account for GHG emissions reductions of $CO_2$, methane, and nitrous oxide related to natural and working lands and the potential impacts of climate change on the ability to reduce GHG emissions and sequester carbon from natural and working lands, where feasible.<br><br>This 2022 Scoping Plan Update describes the next steps and implications of this legislation for the natural and working lands sector. |
| **Senate Bill 1206 (SB 1206) (Skinner, Chapter 884, Statutes of 2022)**<br><br>*Hydrofluorocarbon gases: sale or distribution* | SB 1206 mandates a stepped sales prohibition on newly produced high- global warming potential (GWP) HFCs to transition California's economy toward recycled and reclaimed HFCs for servicing existing HFC-based equipment. Additionally, SB 1206 also requires CARB to develop regulations to increase the adoption of very low-, i.e., GWP < 10, and no-GWP technologies in sectors that currently rely on higher-GWP HFCs. |
| **Senate Bill 27 (SB 27) (Skinner, Chapter 237, Statutes of 2021)**<br><br>*Carbon Sequestration: State Goals: Natural and Working Lands: Registry of Projects* | SB 27 requires CNRA, in coordination with other state agencies, to establish the Natural and Working Lands Climate Smart Strategy by July 1, 2023. This bill also requires CARB to establish specified CO2 removal targets for 2030 and beyond as part of its Scoping Plan. Under SB 27, CNRA is to establish and maintain a registry to identify projects in the state that drive climate action on natural and working lands and are seeking funding.<br><br>CNRA also must track carbon removal and GHG emission reduction benefits derived from projects funded through the registry.<br><br>This bill is reflected directly in the 2022 Scoping Plan Update as $CO_2$ removal targets for 2030 and 2045 in support of carbon neutrality. |
| **Senate Bill 596 (SB 596) (Becker, Chapter 246, Statutes of 2021)**<br><br>*Greenhouse Gases: Cement Sector: Net-zero Emissions Strategy* | SB 596 requires CARB, by July 1, 2023, to develop a comprehensive strategy for the state's cement sector to achieve net-zero-emissions of GHGs associated with cement used within the state as soon as possible, but no later than December 31, 2045. The bill establishes an interim target of 40% below the 2019 average GHG intensity of cement by December 31, 2035. Under SB 596, CARB must:<br><br>● Define a metric for GHG intensity and establish a baseline from which to measure GHG intensity reductions.<br>● Evaluate the feasibility of the 2035 interim target (40% reduction in GHG intensity) by July 1, 2028.<br>● Coordinate and consult with other state agencies.<br>● Prioritize actions that leverage state and federal incentives.<br>● Evaluate measures to support market demand and financial incentives to encourage the production and use of cement with low GHG intensity.<br><br>The 2022 Scoping Plan Update modeling is designed to achieve these outcomes. |
| **Executive Order N-82-20** | Governor Newsom signed Executive Order N-82-20 in October 2020 to combat the climate and biodiversity crises by setting a statewide goal to conserve at least 30% of California's land and coastal waters by 2030. The Executive Order also instructed the CNRA, in consultation with other state agencies, to develop a Natural and Working Lands Climate Smart Strategy that serves as a framework to advance the state's carbon neutrality goal and build climate resilience. In addition to setting a statewide conservation goal, the Executive Order directed CARB to update the target for natural and working lands in support of carbon neutrality as part of this Scoping Plan, and to take into consideration the NWL Climate Smart Strategy. |

| Bill/Executive Order | Summary |
|---|---|
| | Executive Order N-82-20 also calls on the CNRA, in consultation with other state agencies, to establish the California Biodiversity Collaborative (Collaborative). The Collaborative shall be made up of governmental partners, California Native American tribes, experts, business and community leaders, and other stakeholders from across the state. State agencies will consult the Collaborative on efforts to:<br>• Establish a baseline assessment of California's biodiversity that builds upon existing data and can be updated over time.<br>• Analyze and project the impact of climate change and other stressors in California's biodiversity.<br>• Inventory current biodiversity efforts across all sectors and highlight opportunities for additional action to preserve and enhance biodiversity.<br>CNRA also is tasked with advancing efforts to conserve biodiversity through various actions, such as streamlining the state's process to approve and facilitate projects related to environmental restoration and land management. The California Department of Food and Agriculture (CDFA) is directed to advance efforts to conserve biodiversity through measures such as reinvigorating populations of pollinator insects, which restore biodiversity and improve agricultural production.<br>The Natural and Working Lands Climate Smart Strategy informs the 2022 Scoping Plan Update. |
| **Executive Order N-79-20** | Governor Newsom signed Executive Order N-79-20 in September 2020 to establish targets for the transportation sector to support the state in its goal to achieve carbon neutrality by 2045. The targets established in this Executive Order are:<br>• 100% of in-state sales of new passenger cars and trucks will be zero-emission by 2035.<br>• 100% of medium- and heavy-duty vehicles will be zero-emission by 2045 for all operations where feasible, and by 2035 for drayage trucks.<br>• 100% of off-road vehicles and equipment will be zero-emission by 2035 where feasible.<br>The Executive Order also tasked CARB to develop and propose regulations that require increasing volumes of zero- electric passenger vehicles, medium- and heavy-duty vehicles, drayage trucks, and off-road vehicles toward their corresponding targets of 100% zero-emission by 2035 or 2045, as listed above.<br>The 2022 Scoping Plan Update modeling reflects achieving these targets. |
| **Executive Order N-19-19** | Governor Newsom signed Executive Order N-19-19 in September 2019 to direct state government to redouble its efforts to reduce GHG emissions and mitigate the impacts of climate change while building a sustainable, inclusive economy. This Executive Order instructs the Department of Finance to create a Climate Investment Framework that:<br>• Includes a proactive strategy for the state's pension funds that reflects the increased risks to the economy and physical environment due to climate change.<br>• Provides a timeline and criteria to shift investments to companies and industry sectors with greater growth potential based on their focus of reducing carbon emissions and adapting to the impacts of climate change.<br>• Aligns with the fiduciary responsibilities of the California Public Employees' Retirement System, California State Teachers' Retirement System, and the University of California Retirement Program.<br>Executive Order N-19-19 directs the State Transportation Agency to leverage more than $5 billion in annual state transportation spending to help reverse the trend of increased fuel consumption and reduce GHG emissions associated with the transportation sector. It also calls on the Department of General Services to leverage its management and ownership of the state's 19 million square feet in managed buildings, 51,000 vehicles, and other physical assets and goods to minimize state government's carbon footprint. Finally, it tasks CARB with accelerating progress toward California's goal of five million ZEV sales by 2030 by: |

| Bill/Executive Order | Summary |
|---|---|
| | • Developing new criteria for clean vehicle incentive programs to encourage manufacturers to produce clean, affordable cars.<br>• Proposing new strategies to increase demand in the primary and secondary markets for ZEVs.<br>• Considering strengthening existing regulations or adopting new ones to achieve the necessary GHG reductions from within the transportation sector.<br><br>The 2022 Scoping Plan Update modeling reflects efforts to accelerate ZEV deployment. |
| **Senate Bill 576 (SB 576) (Umberg, Chapter 374, Statutes of 2019)**<br><br>*Coastal Resources: Climate Ready Program and Coastal Climate Change Adaptation, Infrastructure and Readiness Program* | Sea level rise, combined with storm-driven waves, poses a direct risk to the state's coastal resources, including public and private real property and infrastructure. Rising marine waters threaten sensitive coastal areas, habitats, the survival of threatened and endangered species, beaches, other recreation areas, and urban waterfronts. SB 576 mandates that the Ocean Protection Council develop and implement a coastal climate adaptation, infrastructure, and readiness program to improve the climate change resiliency of California's coastal communities, infrastructure, and habitat. This bill also instructs the State Coastal Conservancy to administer the Climate Ready Program, which addresses the impacts and potential impacts of climate change on resources within the conservancy's jurisdiction. |
| **Assembly Bill 65 (AB 65) (Petrie-Norris, Chapter 347, Statutes of 2019)**<br><br>*Coastal Protection: Climate Adaption: Project Prioritization: Natural Infrastructure: Local General Plans* | This bill requires the State Coastal Conservancy, when it allocates any funding appropriated pursuant to the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Act of 2018, to prioritize projects that use natural infrastructure in coastal communities to help adapt to climate change. The bill requires the conservancy to provide information to the Office of Planning and Research on any projects funded pursuant to the above provision to be considered for inclusion into the clearinghouse for climate adaptation information. The bill authorizes the conservancy to provide technical assistance to coastal communities to better assist them with their projects that use natural infrastructure. |
| **Executive Order B-55-18** | Governor Brown signed Executive Order B-55-18 in September 2018 to establish a statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and to achieve and maintain net negative emissions thereafter. Policies and programs undertaken to achieve this goal shall:<br><br>• Seek to improve air quality and support the health and economic resiliency of urban and rural communities, particularly low-income and disadvantaged communities.<br>• Be implemented in a manner that supports climate adaptation and biodiversity, including protection of the state's water supply, water quality, and native plants and animals.<br><br>This Executive Order also calls for CARB to:<br><br>• Develop a framework for implementation and accounting that tracks progress toward this goal.<br>• Ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.<br><br>The 2022 Scoping Plan Update is designed to achieve carbon neutrality no later than 2045 and the modeling includes technology and fuel transitions to achieve that outcome. |
| **Senate Bill 100 (SB 100) (De León, Chapter 312, Statutes of 2018)**<br><br>*California Renewables Portfolio Standard Program: emissions of greenhouse gases* | Under SB 100, the CPUC, CEC, and CARB shall use programs under existing laws to achieve 100% clean electricity. The statute requires these agencies to issue a joint policy report on SB 100 every four years. The first of these reports was issued in 2021.<br><br>The 2022 Scoping Plan Update reflects the SB 100 Core Scenario resource mix with a few minor updates. |

| Bill/Executive Order | Summary |
|---|---|
| **Assembly Bill 2127 (AB 2127) (Ting, Chapter 365, Statutes of 2018)**<br>*Electric Vehicle Charging Infrastructure: Assessment* | This bill requires the CEC, working with CARB and the CPUC, to prepare and biennially update a statewide assessment of the electric vehicle charging infrastructure needed to support the levels of electric vehicle adoption required for the state to meet its goals of putting at least 5 million zero-emission vehicles on California roads by 2030 and of reducing emissions of GHGs to 40% below 1990 levels by 2030. The bill requires the CEC to regularly seek data and input from stakeholders relating to electric vehicle charging infrastructure.<br>This bill supports the deployment of ZEVs as modeled in the 2022 Scoping Plan Update. |
| **Senate Bill 30 (SB 30) (Lara, Chapter 614, Statutes of 2018)**<br>*Insurance: Climate Change* | This bill requires the Insurance Commissioner to convene a working group to identify, assess, and recommend risk transfer market mechanisms that, among other things, promote investment in natural infrastructure to reduce the risks of climate change related to catastrophic events, create incentives for investment in natural infrastructure to reduce risks to communities, and provide mitigation incentives for private investment in natural lands to lessen exposure and reduce climate risks to public safety, property, utilities, and infrastructure. The bill requires the policies recommended to address specified questions. |
| **Assembly Bill 2061 (AB 2061) (Frazier, Chapter 580, Statutes of 2018)**<br>*Near-zero-emission and Zero-emission Vehicles* | Existing state and federal law set specified limits on the total gross weight imposed on the highway by a vehicle with any group of two or more consecutive axles. Under existing federal law, the maximum gross vehicle weight of that vehicle may not exceed 82,000 pounds. AB 2061 authorizes a near-zero- emission vehicle or a zero-emission vehicle to exceed the weight limits on the power unit by up to 2,000 pounds.<br>This bill supports the deployment of cleaner trucks as modeled in this 2022 Scoping Plan Update. |

The 2022 Scoping Plan Scenario identifies the need to accelerate AB32's 2030 target, from 40 percent to 48 percent below 1990 levels. Cap-and-Trade regulation continues to play a large factor in the reduction of near-term emissions for meeting the 2030 reduction target. Every sector of the economy will need to begin to transition in this decade to meet these GHG reduction goals and achieve carbon neutrality no later than 2045. The 2022 Scoping Plan 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. The Scoping Plan Scenario is summarized in Table 2-1 starting on page 72 of the Scoping Plan. It includes references to relevant statutes and Executive Orders (see also **Table 15** above), although it is not comprehensive of all existing new authorities for directing or supporting the actions described. Table 2-1 in the 2022 Scoping Plan Update identifies actions related to a variety of sectors such as: smart growth and reductions in Vehicle Miles Traveled (VMT); light-duty vehicles (LDV) and zero-emission vehicles (ZEV); truck ZEVs; reduce fossil energy, emissions, and GHGs for aviation ocean-going vessels, port operations, freight and passenger rail, oil and gas extraction; and petroleum refining; improvements in electricity generation; electrical appliances in new and existing residential and commercial buildings; electrification and emission reductions across industries such as the for food products, construction equipment, chemicals and allied products, pulp and paper, stone/clay/glass/cement, other industrial manufacturing, and agriculture; retiring of combined heat and power facilities; low carbon fuels for transportation, business, and industry; improvements in non-combustion methane emissions, and introduction of low GWP refrigerants.

Achieving the targets described in the 2022 Scoping Plan Update will require continued commitment to and successful implementation of existing policies and programs, and identification of new policy tools and technical solutions to go further, faster. California's Legislature and state agencies will continue to collaborate to achieve the state's climate, clean air, equity, and broader economic and environmental protection goals. It will be necessary to maintain and strengthen this collaborative effort, and to draw upon the assistance of the federal government, regional and local governments, tribes, communities, academic institutions, and the private sector to achieve the state's near-term and longer-term emission reduction goals and a more equitable future for all Californians. The Scoping Plan acknowledges that the path forward is not dependent on one agency, one state, or even one country. However, the State can lead by engaging Californians and demonstrating how actions at the state, regional, and local levels of governments, as well as action at community and individual levels, can contribute to addressing the challenge.

Aligning local jurisdiction action with state-level priorities to tackle climate change and the outcomes called for in the 2022 Scoping Plan Update is identified as critical to achieving the statutory targets for 2030 and 2045. The 2022 Scoping Plan Update discusses the role of local governments in meeting the State's GHG reductions goals.[73] Local governments have the primary authority to plan, zone, approve, and permit how and where land is developed to accommodate population growth, economic growth, and the changing needs of their jurisdictions. They also make critical decisions on how and when to deploy transportation infrastructure, and can choose to support transit, walking, bicycling, and neighborhoods that do not force people into cars. Local governments also have the option to adopt building ordinances that exceed statewide building code requirements and play a critical role in facilitating the rollout of ZEV infrastructure. As a result, local government decisions play a critical role in supporting state-level measures to contain the growth of GHG emissions associated with the transportation system and the built environment—the two largest GHG emissions sectors over which local governments have authority.

The 2022 Scoping Plan Update also identifies multiple legal tools open to local jurisdictions to support statewide priorities, including development of a climate action plan (CAP), sustainability plan, or inclusion of a plan for reduction of GHG emissions and climate actions within a jurisdiction's general plan. The City has taken the initiative in combating climate change by developing policies identified in the City's Conservation and Open Space Element of the General Plan, as discussed below.

**Jobs and Economic Improvement through Environmental Leadership Act of 2011.** The Jobs and Economic Improvement through Environmental Leadership Act of 2021 (SB 7), codified in PRC Sections 21178

73 CARB, *2022 Scoping Plan for Achieving Carbon Neutrality*, 2022. Available online at: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp_1.pdf, accessed March 17, 2025.

through 21189.3, is intended to encourage California's economic recovery by providing a streamlined process for judicial review of compliance with CEQA for development projects that qualify as an Environmental Leadership Development Project (ELDP). In order to be certified as an ELDP, the Governor of California must determine that the project would result in a minimum investment of $100 million, would create high-wage jobs, and would not result in net additional GHG emissions, as determined by CARB. Further, the project must be located on an infill site, achieve the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Gold certification, be consistent with the relevant regional SCS, and exceed the transportation efficiency for comparable projects by at least 15 percent.

## Regional

### *Bay Area Air District*[74]

The BAAD regulates the stationary sources of air pollution in the nine counties of California's San Francisco Bay Area, Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma. The BAAD has established thresholds of significance pertaining to a project's impacts related to greenhouse gases in their *2022 CEQA Guidelines*. For land use development projects, the BAAD recommends using the approach endorsed by the California Supreme Court in *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) (62 Cal.4th 204), which evaluates a project based on its effect on California's efforts to meet the State's long-term climate goals. As the Supreme Court held in that case, a project that would be consistent with meeting those goals can be found to have a less than significant impact on climate change under CEQA. According to the BAAD, if a project would contribute its "fair share" of what is needed to achieve the state's long-term GHG reduction goals, then the lead agency can find that the project is adequately contributing to solving the problem of global climate change and that project's impact is not significant.

The BAAD does not provide an adopted threshold of significance for construction related GHG emissions. The *2022 CEQA Guidelines* states that GHG emissions from construction represent a very small portion of a project's lifetime GHG emissions. Therefore, the thresholds for land use projects are designed to address operational GHG emissions, which represent the project's GHG emissions [75] According to the BAAD *2022 CEQA Guidelines*, a proposed land use development project would not have a significant GHG impact if operation of the Project would meet one of the following thresholds (must include **A** or **B)**:

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74 As previously mentioned, the Bay Area Air Quality Management District is now referred to the Bay Area Air District (BAAD) as of January 22, 2025.

75 BAAD, *2022 CEQA Guidelines,* adopted April 20, 2022. Available online at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed April 30, 2025.

**Threshold A:** Projects must include, at a minimum, the following project design elements:

- Buildings:
  - The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
  - The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the *State CEQA Guidelines.*
- Transportation:
  - Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
    - Residential projects: 15 percent below the existing VMT per capita
    - Office projects: 15 percent below the existing VMT per employee
    - Retail projects: no net increase in existing VMT
- Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

**Threshold B:** Projects must be consistent with a local GHG reduction strategy that meets the criteria under *State CEQA Guidelines* Section 15183.5(b).

### *Plan Bay Area 2050 RTP/SCS*

ABAG and the MTC are the two regional planning agencies for the Bay Area's nine counties – Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma. The ABAG and the MTC are responsible for developing and adopting a SCS that integrates transportation, land use, and housing to meet CARB's 7 percent per capita GHG reduction by 2020 goal and a 15 percent per capita GHG reduction by 2035 goal for the Bay Area. ABAG and MTC adopted the Plan Bay Area 2050 RTP/SCS on October 21, 2021. The RTP/SCS states that the ABAG region is home to about 8 million people and currently

includes approximately 4 million jobs.[76] The RTP/SCS projects that, by 2050, these figures will increase to 10 million people and 5 million jobs.[77] The Plan Bay Area 2050 outlines 35 strategies to improve housing, the economy, transportation, and the environment to support a Bay Area that is affordable, connected, diverse, healthy, and vibrant through 2050 and beyond. If Plan Bay Area 2050's strategies were implemented, housing and transportation costs, the two largest expenditures for most Bay Area families, would decrease as a share of household income by 2050, and families with low incomes would see larger reductions in these costs than the region at large.[78] Additionally, under Plan Bay Area 2050's strategies, just under half of all Bay Area households would live within one half-mile of frequent transit by 2050, with this share increasing to over 70 percent for households with low incomes.[79] Greenhouse gas emissions from transportation would decrease significantly as a result of these transportation and land use changes, and the Bay Area would meet the state mandate of a 19 percent reduction in per capita emissions by 2035—but only if all strategies are implemented.[80]

## Local

### *San Rafael General Plan 2040*

The City adopted the San Rafel General Plan 2040 (General Plan) on August 2, 2021. The General Plan provides a vision for the City's future and a commitment to the City's residents and businesses through sustaining existing great qualities but also through improvements that forge a more resilient, equitable, and healthy future for the City.[81] The General Plan contains chapters that provide goals, policies, and programs pertaining to climate change. Goals and policies related to climate change and greenhouse gases that are relevant to the Project are listed below:

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76 ABAG, MTC, *Plan Bay Area 2050,* October 21, 2021. Available online at: https://planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021.pdf, accessed March 24, 2025.

77 *Ibid.*

78 *Ibid.*

79 *Ibid.*

80 *Ibid.*

81 City of San Rafael, *San Rafael General Plan 2040*, adopted August 2, 2021. Available online at: https://files.ceqanet.opr.ca.gov/274617-2/attachment/RdmHH0iljbPCCRa4ssb-qcgUA6ZFqcjPOSzMIicDxdJXw5Y_CAd9e3wjHZdJsJmMoZpUvqZhN5sQt-Yb0, accessed March 20, 2025.

**Land Use Element**

**Goal LU-1:** **Well-Managed Growth and Change.** Grow and change in a way that serves community needs, protects the environment, improves fiscal stability, and enhances the quality of life.

**Policy LU-1.3:** **Land Use and Climate Change.** Focus future housing and commercial development in areas where alternatives to driving are most viable and shorter trip lengths are possible, especially around transit stations, near services, and on sites with frequent bus service. This can reduce the greenhouse gas emissions associated with motor vehicle trips and support the City's climate action goals.

**Conservation and Climate Change Element**

**Goal C-4:** **Sustainable Energy Management.** Use energy in a way that protects the environment, addresses climate change, and conserves natural resources.

**Policy C-4.1:** **Renewable Energy.** Support increased use of renewable energy and remove obstacles to its use.

**Policy C-4.2:** **Energy Conservation.** Support construction methods, building materials, and home improvements that improve energy efficiency in existing and new construction.

**Goal C-5:** **Reduced Greenhouse Gas Emissions.** Achieve a 40 percent reduction in 1990 GHG emissions levels by 2030 and a 60 percent reduction by 2040.

**Policy C-5.4:** **Municipal Programs.** Implement and publicize municipal programs to demonstrate the City's commitment to sustainability efforts and reducing GHGs.

**Program C-5.4A:** **Low Carbon Municipal Vehicles.** As finances allow, continue to shift the City's vehicle fleet to zero emission vehicles and use low carbon fuels as an interim measure until gasoline-powered vehicles are replaced.

**Mobility Element**

**Goal M-1:** **Regional Leadership in Mobility.** Take a leadership role in developing regional transportation solutions.

**Policy M-1.4:** **Transportation Innovation.** Take a leadership role in delivering innovative transportation services and improvements.

**Goal M-3:** **Cleaner Transportation.** Coordinate transportation, land use, community design, and economic development decisions in a way that reduces GHG emissions, air and water pollution, noise, and other environmental impacts related to transportation.

**Policy M-3.1:** **VMT Reduction.** Achieve State-mandated reductions in Vehicle Miles Traveled [VMT] by requiring development and transportation projects to meet specific VMT metrics and implement VMT reduction measures.

**Policy M-3.3:** **Transportation Demand Management.** Encourage, and where appropriate require, transportation demand measures that reduce VMT and peak period travel demand. These measures include, but are not limited to, transit passes and flextime, flexible work schedules, pedestrian and bicycle improvements, ridesharing, and changes to project design to reduce trip lengths and encourage cleaner modes of travel.

**Policy M-3.5:** **Alternative Transportation Modes.** Support efforts to create convenient, cost-effective alternatives to single passenger auto travel. Ensure that public health, sanitation, and user safety is addressed in the design and operation of alternative travel modes.

**Policy M-3.6:** **Low Carbon Transportation.** Encourage electric and other low-carbon emission vehicles, as well as the infrastructure needed to support these vehicles.

**Policy M-3.8:** **Land Use and VMT.** Encourage higher-density employment and residential uses near major transit hubs such as Downtown San Rafael, recognizing the potential for VMT reduction in areas where there are attractive alternatives to driving, concentrations of complementary activities, and opportunities for shorter trips between different uses.

**Goal M-4:** **High Quality, Affordable Public Transit.** Support accessible, reliable, cost-effective transit service that provide a convenient, affordable, efficient alternative to driving.

**Policy M-4.5:** **Transit and the Environment.** Encourage a less carbon-intensive transit system with reduced environmental impacts. This could include electrification of buses and trains, and the use of smaller vehicles in areas of lower demand. Environmental costs and benefits should be a critical factor when evaluating transit service improvements over the long- and short-term.

**Policy M-4.7:** **Intermodal Transit Hubs.** Support efforts to develop intermodal transit hubs in downtown and North San Rafael to provide safe, convenient connections for all travelers. Such hubs should include secure bicycle parking, EV charging stations, and efficient drop-off and pick-up areas and create a positive experience for those arriving in San Rafael.

**Program M-4.7A:** **Transit Center Relocation.** Complete the relocation process for the San Rafael Transit Center. Design of the facility should consider the effects on local street congestion and the safety of those walking or bicycling to and from the facility. Continue to work with transit service providers to coordinate schedules, transfers, and routing in a manner that is convenient for San Rafael travelers.

### *San Rafael Climate Change Action Plan 2030*

Adopted April 23, 2019, the San Rafael Climate Change Action Plan 2030 serves as the City's Climate Action Plan (CAP), a document that outlines programs and actions needed for the City to reduce its GHG emissions.[82] The CAP includes a variety of regulation, incentive-based and voluntary strategies that are expected to reduce GHG emissions from both existing and new developments in the City. The CAP demonstrates that with the implementation of these strategies, the City should reduce emissions to 19 percent below 1990 levels by 2020 and (equivalent to 31 percent below 2005 levels), and 42 percent below

82 City of San Rafael, *Climate Change Action Plan 2030,* April 23, 2019. Available online at: https://storage.googleapis.com/proudcity/sanrafaelca/uploads/2019/06/Att-D-CCAP-2030-Final-Draft-4-23-19.pdf, accessed April 29, 2025.

1990 levels by 2030, which is enough to surpass the City and State goals for those years. The following GHG reduction measures are relevant to the Project:

**Low Carbon Transportation**

**Measure LCT-C5: Public Transit.** Support and promote public transit by taking the following actions:

c) Support the development of an attractive and efficient multi-modal transit center and provide safe routes to the transit center.

e) Encourage transit providers, including school buses, to use renewable diesel as a transition fuel and to purchase electric buses whenever replacing existing buses.

**Measure LCT-M1: Zero and Low Emission City Vehicles.** Purchase or lease zero-emission vehicles for the City fleet whenever feasible, and when not, the most fuel-efficient models available. Promote City adoption and procurement of zero-emission vehicles and charging infrastructure to the public.

**Renewable Energy**

**Measure RE-C1: Renewable Energy Generation.** Acceleration of residential and commercial solar and other renewable energy systems.

c) Encourage installation of solar panels on carports and over parking areas on commercial projects and large-scale residential developments through ordinance, engagement campaigns, or incentives.

**Measure RE-M1: Solar Energy Systems for Municipal Buildings.** Install solar energy systems at municipal buildings and facilities where feasible and investigate and pursue innovative technologies such as battery storage and demand response programs.

## 5.3 THRESHOLDS AND METHODOLOGY

### Thresholds of Significance

Consistent with Appendix G of the *State CEQA Guidelines*, a project would have a significant impact if it would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

2. Conflict with an applicable plan, policy or regulations adopted for the purpose of reducing the emissions of greenhouse gas emissions.

The BAAD does not provide an adopted threshold of significance for construction related GHG emissions. The *BAAD 2022 CEQA Guidelines*[83] states that GHG emissions from construction represent a very small portion of a project's lifetime GHG emissions. Therefore, the thresholds for land use projects are designed to address operational GHG emissions, which represent the project's GHG emissions.

According to the *BAAD 2022 CEQA Guidelines*, a proposed land use development project would not have a significant GHG impact if operation of the Project would meet one of the following thresholds (must include **A** or **B)**:

**Threshold A:** Projects must include, at a minimum, the following project design elements:

- Buildings:
  - The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
  - The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the *State CEQA Guidelines.*
- Transportation:
  - Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:
    - Residential projects: 15 percent below the existing VMT per capita
    - Office projects: 15 percent below the existing VMT per employee

83 BAAD, *2022 CEQA Guidelines,* adopted April 20, 2022. Available online at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines, accessed April 30, 2025.

- Retail projects: no net increase in existing VMT

– Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

**Threshold B:** Projects must be consistent with a local GHG reduction strategy that meets the criteria under *State CEQA Guidelines* Section 15183.5(b).

## Methodology

GHG emissions for the Project were analyzed using the methodology recommended in the *BAAD 2022 CEQA Guidelines*. As stated under the thresholds of significance heading above, the BAAD recommends the operation of all land use projects meet either BAAD Thresholds "**A**" or "**B**." While the Project meets most of the qualifications to be analyzed under BAAD Threshold A, the San Rafael Climate Change Action Plan 2030 qualifies as a "greenhouse gas emissions reduction plan" pursuant to Section 15183.5(b)(1) of the *State CEQA Guidelines*.[84] Therefore, **Impacts GHG-1** and **GHG-2** have been analyzed together within the scope of BAAD Threshold "**B**."

GHG emissions were calculated with the CalEEMod. Operational GHG emissions result from both direct and indirect sources. Direct emissions include emissions from fuel combustion in vehicles and natural gas combustion from stationary sources. Indirect sources include off-site emissions occurring as a result of electricity and water consumption and solid waste.

## 5.4 PROJECT IMPACTS

**Impact GHG-1** **Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.**

**Impact GHG-2** **Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gas emissions.**

Section 15064.4(a) of the *State CEQA Guidelines* states, in part, that a lead agency shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project.

The Project would generate GHG emissions during temporary, short-term construction activities such as demolition, grading, running of construction equipment engines, movement of on-site heavy-duty

84 Confirmed via telephone communication on May 2, 2025, with City officials.

construction vehicles, hauling of materials to and from the site, asphalt paving, and construction worker motor vehicle trips.

With the use of CalEEMod, GHG emissions associated with Project construction were calculated from off-road equipment usage, hauling vehicles, delivery, and worker trips to and from the site. According to CalEEMod calculations, the total GHG construction emissions would be approximately 226 MT $CO_2e$ for 2027, 314 MT $CO_2e$ for 2028, and 10.8 MT $CO_2e$ for 2029, totaling approximately 551 MT $CO_2e$. However, these emissions would be temporary in nature and would represent a small portion of a Project's lifetime GHG emissions. As GHG emissions from construction activities would occur over a relatively short time span, it would contribute a relatively small portion of the lifetime GHG emission impact of the Project. The total construction GHG emissions were divided by 30 years to determine an annual construction emission rate to be amortized over the Project's first 30 years of operations. Amortized over a 30-year period, the Project is anticipated to emit approximately 18 metric tons of carbon dioxide per year (MT $CO_2e$/year).

The operations of the Project would generate GHG emissions from mobile sources (vehicles traveling to and from the Project Site), the usage of energy, water, and generation of solid waste and wastewater. Emissions of operational GHGs are shown in **Table 16, Project Greenhouse Gas Emissions**. As shown, the GHG emissions generated by the Project would be approximately 1,083 $CO_2e$ MTY.

**Table 16**
**Project Greenhouse Gas Emissions**

| Emissions Source | Metric Tons of Carbon Dioxide Equivalent (per year) |
|---|---|
| Construction Emissions | 18.37 |
| Mobile Sources | 345.00 |
| Area Sources | 0.27 |
| Energy Sources | 71.50 |
| Water Sources | 3.44 |
| Waste Sources | 22.20 |
| Refrigerants | 638.00 |
| Stationary Sources | 2.00 |
| **Total GHG Emissions** | **1,083** |

*Source: Impact Sciences, Inc. July 2025. See **Appendix A** for GHG emissions details. It is noted that many of the mobile source emissions presently exist in the region and the Project would relocate to a new site. Thus, the presentation of mobile source emissions here is conservative.*

As discussed previously, the Project is being is analyzed under BAAD Threshold "B." Thus, the above quantified illustration of the Project's scope of GHG emissions is provided for informational purposes, but significance under CEQA is based on the Project's consistency with the City's CAP (see **Table 17, Project Consistency with Local Actions)**. In addition to assessing consistency with the CAP, the Project has been assessed for consistency with relevant components of the City's General Plan, AB 32, SB 32, AB 1279 (as outlined in CARB's 2022 Scoping Plan), and ABAG's Plan Bay Area 2050 RTP/SCS. See below.

**Table 17**
**Project Consistency with Local Actions**

| Measures | Consistency Analysis |
|---|---|
| **San Rafael Climate Change Action Plan 2030** | |
| **Measure LCT-C5: Public Transit.** Support and promote public transit by taking the following actions:<br>• Support the development of an attractive and efficient multi-modal transit center and provide safe routes to the transit center.<br>• Encourage transit providers, including school buses, to use renewable diesel as a transition fuel and to purchase electric buses whenever replacing existing buses. | **Consistent.** The Project proposes the development of a new transit facility to support the Marin Transit District. This new facility will be large enough to accommodate parking, charging, and maintenance of the District's fleet of buses. The District has acquired six electric buses and associated charging infrastructure to support their ZEB Plan. The Project is necessary for the eventual full electrification of the District's fleet. The Project would support transit services and would meet climate goals of electrifying transportation. |

| Measures | Consistency Analysis |
|---|---|
| **Measure LCT-M1: Zero and Low Emission City Vehicles.** Purchase or lease zero-emission vehicles for the City fleet whenever feasible, and when not, the most fuel-efficient models available. Promote City adoption and procurement of zero-emission vehicles and charging infrastructure to the public | **Consistent.** The District has acquired six electric buses and associated charging infrastructure to begin implementing the ZEB Plan. The Project supports the impending electrification of the District's fleet of buses. |
| **Measure RE-C1: Renewable Energy Generation.** Acceleration of residential and commercial solar and other renewable energy systems.<br>• Encourage installation of solar panels on carports and over parking areas on commercial projects and large-scale residential developments through ordinance, engagement campaigns, or incentives. | **Consistent.** While this measure calls for the acceleration of solar implementation through regulatory action, the Project supports the end goal of this measure since the Project's bus parking spaces would be dedicated to bus charging, with canopies anticipated to be equipped for rooftop solar. |
| **Measure RE-M1: Solar Energy Systems for Municipal Buildings.** Install solar energy systems at municipal buildings and facilities where feasible and investigate and pursue innovative technologies such as battery storage and demand response programs. | **Consistent.** As previously discussed, the Project is anticipated to incorporate rooftop solar infrastructure on the top of the bus parking canopies. |
| **San Rafael General Plan 2040** | |
| **Goal LU-1:** Well-Managed Growth and Change. Grow and change in a way that serves community needs, protects the environment, improves fiscal stability, and enhances the quality of life.<br>• **Policy LU-1.3: Land Use and Climate Change**. Focus future housing and commercial development in areas where alternatives to driving are most viable and shorter trip lengths are possible, especially around transit stations, near services, and on sites with frequent bus service. This can reduce the greenhouse gas emissions associated with motor vehicle trips and support the City's climate action goals. | **Consistent.** Implementation of the Project will lead to the development of a main transit center for the Marin Transit District. Presently, Marin Transit operates and maintains their fleet of buses from several different yards and facilities, creating inefficiencies and added costs. The Project would reduce these inefficiencies and costs and would provide a large facility with charging infrastructure that can accommodate the District's fleet of buses and the eventual conversion of these buses from diesel to electric. |
| **Goal C-4: Sustainable Energy Management.** Use energy in a way that protects the environment, addresses climate change, and conserves natural resources.<br>• **Policy C-4.1: Renewable Energy.** Support increased use of renewable energy and remove obstacles to its use.<br>• **Policy C-4.2: Energy Conservation.** Support construction methods, building materials, and home improvements that improve energy efficiency in existing and new construction. | **Consistent.** The Project would be built to meet the requirements of the CALGreen Building Code, as well as Title 24, Part 6, relating to energy efficiency standards. Additionally, the Project is anticipated to incorporate rooftop solar infrastructure on the top of the bus parking canopies. |
| **Goal C-5: Reduced Greenhouse Gas Emissions.** Achieve a 40% reduction in 1990 GHG emissions levels by 2030 and a 60% reduction by 2040.<br>• **Policy C-5.4: Municipal Programs.** Implement and publicize municipal programs to demonstrate the City's commitment to sustainability efforts and reducing GHGs.<br>  ○ **Program C-5.4A: Low Carbon Municipal Vehicles.** As finances allow, continue to shift the City's vehicle fleet to zero emission vehicles and use low carbon fuels as an interim measure until gasoline-powered vehicles are replaced. | **Consistent.** The Project proposes the development of a new transit facility to support the Marin Transit District. This new facility will be large enough to accommodate parking, charging, and maintenance of the District's fleet of buses. The District has acquired six electric buses and associated charging infrastructure to support their ZEB Plan. The Project is necessary for the eventual full electrification of the District's fleet. The Project would support transit services and would meet climate goals of electrifying transportation, contributing to the CAP's low carbon transportation measures to reduce government operations emissions. |

| Measures | Consistency Analysis |
|---|---|
| **Goal M-1: Regional Leadership in Mobility.** Take a leadership role in developing regional transportation solutions.<br>• **Policy M-1.4: Transportation Innovation.** Take a leadership role in delivering innovative transportation services and improvements. | **Consistent:** The Project would be innovative in providing a main transit center for the District and would contribute to the state's climate goal of the electrification of transportation with the eventual electrification of the District's fleet of buses. |
| **Goal M-3: Cleaner Transportation.** Coordinate transportation, land use, community design, and economic development decisions in a way that reduces GHG emissions, air and water pollution, noise, and other environmental impacts related to transportation.<br>• **Policy M-3.1: VMT Reduction.** Achieve State-mandated reductions in Vehicle Miles Traveled [VMT] by requiring development and transportation projects to meet specific VMT metrics and implement VMT reduction measures.<br>• **Policy M-3.3: Transportation Demand Management.** Encourage, and where appropriate require, transportation demand measures that reduce VMT and peak period travel demand. These measures include, but are not limited to, transit passes and flextime, flexible work schedules, pedestrian and bicycle improvements, ridesharing, and changes to project design to reduce trip lengths and encourage cleaner modes of travel.<br>• **Policy M-3.5: Alternative Transportation Modes.** Support efforts to create convenient, cost-effective alternatives to single passenger auto travel. Ensure that public health, sanitation, and user safety is addressed in the design and operation of alternative travel modes.<br>• **Policy M-3.6: Low Carbon Transportation.** Encourage electric and other low-carbon emission vehicles, as well as the infrastructure needed to support these vehicles.<br>• **Policy M-3.8: Land Use and VMT.** Encourage higher-density employment and residential uses near major transit hubs such as Downtown San Rafael, recognizing the potential for VMT reduction in areas where there are attractive alternatives to driving, concentrations of complementary activities, and opportunities for shorter trips between different uses. | **Consistent.** The Project proposes the development of a new transit facility to support the Marin Transit District. This new facility will be large enough to accommodate parking, charging, and maintenance of the District's fleet of buses. Presently, Marin Transit operates and maintains their fleet of buses from several different yards and facilities, creating inefficiencies and added costs. The Project would reduce these inefficiencies and costs and would provide a large facility with charging infrastructure that can accommodate the District's fleet of buses and the eventual conversion of these buses from diesel to electric. The District has acquired six electric buses and associated charging infrastructure to support their ZEB Plan. The Project would support and improve existing transit services and operations while supporting state climate goals of electrifying transportation. Additionally, the Project would contribute to the CAP's low carbon transportation measures to reduce government operations emissions. |
| **Goal M-4: High Quality, Affordable Public Transit.** Support accessible, reliable, cost-effective transit service that provide a convenient, affordable, efficient alternative to driving.<br>• **Policy M-4.5: Transit and the Environment.** Encourage a less carbon-intensive transit system with reduced environmental impacts. This could include electrification of buses and trains, and the use of smaller vehicles in areas of lower demand. Environmental costs and benefits should be a critical factor when evaluating transit service improvements over the long- and short-term.<br>• **Policy M-4.7: Intermodal Transit Hubs.** Support efforts to develop intermodal transit hubs in downtown and North San Rafael to provide safe, convenient connections for all travelers. Such hubs should include secure bicycle parking, EV charging stations, and efficient drop-off and pick-up areas and create a positive experience for those arriving in San Rafael.<br>o **Program M-4.7A: Transit Center Relocation.** Complete the relocation process for the San Rafael Transit Center. Design of the facility should consider the effects on local street congestion and the safety of those walking or bicycling to and from the facility. | **Consistent.** The Project proposes the development of a new transit facility to support the Marin Transit District, completing Program M-4.7A of Goal M-4. The Project will provide a large facility with charging infrastructure that can accommodate the District's fleet of buses and the eventual conversion of these buses from diesel to electric. |

| Measures | Consistency Analysis |
|---|---|
| Continue to work with transit service providers to coordinate schedules, transfers, and routing in a manner that is convenient for San Rafael travelers. | |

## *Consistency With AB 32, SB 32, AB 1279 & 2022 Scoping Plan*

The Project would be consistent with applicable statewide regulatory programs designed to reduce GHG emissions consistent with the goals established in AB 32, SB 32, AB 1279. AB 32 required CARB to adopt a scoping plan indicating how reductions in significant GHG sources will be achieved through regulations, market mechanisms, and other actions. In 2008, CARB released the Climate Change Proposed Scoping Plan that contained an outline of the proposed state strategies to achieve the 2020 greenhouse gas emission limits as outlined in AB 32. In response to SB 32, CARB adopted California's 2017 Climate Change Scoping Plan, which outlines the proposed framework of action for achieving California's SB 32 2030 GHG target: a 40 percent reduction in GHG emissions by 2030 relative to 1990 levels.[85] The 2030 target is intended to ensure that California remains on track to achieve the goal set forth by E.O. B-30-15 to reduce statewide GHG emissions by 2050 to 80 percent below 1990 levels. In response to the passage of AB 1279 and the identification of the 2045 GHG reduction target, CARB published the 2022 Scoping Plan for Achieving Carbon Neutrality. Appendix D, *Local Actions*, of the 2022 Scoping Plan Update includes "recommendations intended to build momentum for local government actions that align with the State's climate goals, with a focus on local GHG reduction strategies (commonly referred to as climate action planning) and approval of new land use development projects, including through environmental review under the California Environmental Quality Act." Appendix D, Local Actions, of the 2022 Scoping Plan Update recommends that jurisdictions that want to take meaningful climate action aligned with the State's climate goals should look to the following three priority areas:

- Transportation Electrification,
- VMT Reduction, and
- Building Decarbonization.

To assist local jurisdictions, the 2022 Scoping Plan Update presents a non-exhaustive list of impactful GHG reduction strategies that can be implemented by local governments within these three priority areas (Priority GHG Reduction Strategies for Local Government Climate Action Priority Areas).[86]

85 CARB, *California's 2017 Climate Change Scoping Plan*, November 2017.

86 Table 1 of Appendix D, *2022 Scoping Plan Update*, November 2022.

**Transportation Electrification.** The Project proposes to develop the Project Site with a zero emissions charging and maintenance building dedicated to Marin Transit District operations and visitor, employee, and bus parking. The facility will maintain a 70-fixed route vehicle fleet and park approximately two thirds of the total fleet. The Project is necessary to not only provide a larger facility to accommodate the District's fleet of buses, but to also meet climate goals and CARB requirements. Marin Transit is converting from diesel buses to electric under its ZEB Plan. As part of the ZEB Plan, the District has acquired six electric buses and associated charging infrastructure. While the Project will initially support both diesel and electric vehicles, the Project supports the goals of the District's ZEB Plan through the eventual conversion of all District buses from diesel to electric. The Project would support the State and the City's goals around the electrification of transportation and is consistent with the Scoping Plan's priority area of transportation electrification.

**VMT Reduction**

The Governor's Office of Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018), which provides guidance on identifying CEQA VMT impacts and mitigation measures, provides the following guidance on transit and active transportation projects.

Transit and active transportation projects generally reduce VMT and therefore are presumed to cause a less-than-significant impact on transportation. This presumption may apply to all passenger rail projects, bus and bus rapid transit projects, and bicycle and pedestrian infrastructure projects. Streamlining transit and active transportation projects aligns with each of the three statutory goals contained in SB 743 by reducing GHG emissions, increasing multimodal transportation networks, and facilitating mixed use development.

The above OPR guidance also indicates that "*Projects that would not likely lead to a substantial or measurable increase in vehicle travel, and therefore generally should not require an induced travel analysis, include: projects designed to improve the condition of existing assets…and that do not add additional motor vehicle capacity.*"

The Project's provision of a transit center for the District will reduce VMT to the three other properties owned by the District and facilitates transit services, which reduce VMT in the community by providing alternatives to private automobile travel. As such, the Project's improvements to public transportation would be consistent with the Scoping Plan goals of reducing VMT.

**Building Decarbonization.** The new facility will be built to meet the most current CALGreen Buildings Standards, Title 24 standards, and the City's Green Building Code (Chapter 12.235 of the San Rafael Municipal Code). Additionally, the bus parking spaces would be dedicated to bus charging, with potential

for the canopies to be equipped for rooftop solar. As such, the Project would not conflict with the Scoping Plan's goals of building decarbonization.

### *Consistency with ABAG RTP/SCS (Plan Bay Area 2050)*

The State of California has adopted plans and policies designed to reduce regional and local GHG emissions. SB 375 requires that each MPO prepare an SCS in the RTP that demonstrates how the region will meet greenhouse gas emissions targets. SB 375 establishes a collaborative relationship between MPOs and CARB to establish GHG emissions targets for each region in the state. Under the guidance of the goals and objectives adopted by ABAG's Regional Council, the RTP/SCS was developed to provide a blueprint to integrate land use and transportation strategies to help achieve a coordinated and balanced regional transportation system. The primary goal of the SCS is to provide a vision for future growth that will decrease per capita GHG emissions from passenger vehicles. However, the strategies contained in the SCS will produce benefits for the region far beyond simply reducing GHG emissions. The SCS integrates the transportation network and related strategies with an overall land use pattern that responds to projected growth, housing needs, changing demographics, and transportation demands. The regional vision of the SCS maximizes current voluntary local efforts that support the goals of SB 375. The SCS focuses the majority of new housing and job growth in high-quality transit areas, resulting in an improved jobs-housing balance and more opportunity for transit-oriented development. Greenhouse gas emissions from transportation would decrease significantly as a result of these transportation and land use changes, and the Bay Area would meet the state mandate of a 19 percent reduction in per capita emissions by 2035 — but only if all strategies detailed in the RTP/SCS are implemented.

The Project involves relocating buses that are stored at a patchwork of leased and contractor owned facilities in San Rafael and Novato to the Project Site at 1075 Francisco Boulevard East. The buses may be relocated from multiple locations: Golden Gate Transit sites at 1011 Andersen Drive in San Rafael and 1 Golden Gate Place in Novato, the Central Marin Sanitation Agency on Andersen Drive, multiple Marin Airporter sites including 1301 Andersen Drive and 2333 Kerner Boulevard in San Rafael, multiple Transdev sites including 3000 Kerner Boulevard in San Rafael, and multiple MV transportation sites including 4 Peter Behr Drive in San Rafael and 7505 Redwood Boulevard in Novato. The Project would also shift employees to the Project Site, which, due to its proximity to the existing sites, would not result in substantial changes in VMT. Furthermore, as discussed above, the Governor's Office of Planning and Research Technical Advisory on Evaluating Transportation Impacts in CEQA states transit and active transportation projects generally reduce VMT and therefore are presumed to cause a less-than-significant impact on transportation. As such, the Project would be consistent with the primary goal of the RTP/SCS to decrease per capita GHG emissions from passenger vehicles .

## *Conclusion*

As demonstrated above, the Project would be consistent with applicable measures and policies contained within the City's CAP. Furthermore, the Project would be consistent with relevant components of the City's General Plan, AB 32, SB 32, AB 1279 (as outlined in CARB's 2022 Scoping Plan), and ABAG's Plan Bay Area 2050 RTP/SCS. Impacts would be less than significant.

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# APPENDIX A

## Air Quality Data

# Zero Emissions Charging and Maintenance Facility Custom Report

## Table of Contents

# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | Zero Emissions Charging and Maintenance Facility |
| Construction Start Date | 7/5/2027 |
| Operational Year | 2029 |
| Lead Agency | — |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 3.60 |
| Precipitation (days) | 7.60 |
| Location | 37.959235, -122.503014 |
| County | Marin |
| City | San Rafael |
| Air District | Bay Area AQMD |
| Air Basin | San Francisco Bay Area |
| TAZ | 935 |
| EDFZ | 2 |
| Electric Utility | Pacific Gas & Electric Company |
| Gas Utility | Pacific Gas & Electric |
| App Version | 2022.1.1.29 |

## 1.2. Land Use Types

| Land Use Subtype | Size | Unit | Lot Acreage | Building Area (sq ft) | Landscape Area (sq ft) | Special Landscape Area (sq ft) | Population | Description |
|---|---|---|---|---|---|---|---|---|
| Automobile Care Center | 13.1 | 1000sqft | 0.30 | 13,100 | 0.00 | — | — | — |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Parking Lot | 3.20 | Acre | 3.20 | 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. | 2.92 | 1.73 | 23.7 | 23.5 | 0.07 | 0.67 | 4.95 | 5.62 | 0.62 | 1.88 | 2.50 | — | 9,940 | 9,940 | 0.97 | 1.12 | 13.5 | 10,311 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 10.5 | 10.2 | 15.7 | 23.6 | 0.04 | 0.53 | 0.22 | 0.75 | 0.48 | 0.05 | 0.54 | — | 4,128 | 4,128 | 0.17 | 0.05 | 0.02 | 4,147 |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 1.30 | 1.15 | 6.77 | 9.87 | 0.02 | 0.23 | 0.31 | 0.45 | 0.21 | 0.12 | 0.25 | — | 1,858 | 1,858 | 0.09 | 0.08 | 0.38 | 1,866 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.24 | 0.21 | 1.24 | 1.80 | < 0.005 | 0.04 | 0.06 | 0.08 | 0.04 | 0.02 | 0.04 | — | 308 | 308 | 0.01 | 0.01 | 0.06 | 309 |

### 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2027 | 2.92 | 1.73 | 23.7 | 23.5 | 0.07 | 0.67 | 4.95 | 5.62 | 0.62 | 1.88 | 2.50 | — | 9,940 | 9,940 | 0.97 | 1.12 | 13.5 | 10,311 |
| 2028 | 1.21 | 1.01 | 9.01 | 13.1 | 0.02 | 0.30 | 0.05 | 0.35 | 0.28 | 0.01 | 0.29 | — | 2,488 | 2,488 | 0.10 | 0.03 | 0.22 | 2,499 |
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2027 | 1.25 | 1.04 | 9.48 | 13.1 | 0.02 | 0.34 | 0.05 | 0.39 | 0.31 | 0.01 | 0.32 | — | 2,488 | 2,488 | 0.10 | 0.03 | 0.01 | 2,499 |
| 2028 | 10.5 | 10.2 | 15.7 | 23.6 | 0.04 | 0.53 | 0.22 | 0.75 | 0.48 | 0.05 | 0.54 | — | 4,128 | 4,128 | 0.17 | 0.05 | 0.02 | 4,147 |
| 2029 | 10.5 | 10.1 | 15.2 | 23.5 | 0.04 | 0.49 | 0.22 | 0.71 | 0.45 | 0.05 | 0.50 | — | 4,122 | 4,122 | 0.17 | 0.05 | 0.02 | 4,141 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2027 | 0.54 | 0.41 | 4.23 | 5.26 | 0.01 | 0.14 | 0.31 | 0.45 | 0.13 | 0.12 | 0.25 | — | 1,329 | 1,329 | 0.09 | 0.08 | 0.38 | 1,354 |
| 2028 | 1.30 | 1.15 | 6.77 | 9.87 | 0.02 | 0.23 | 0.04 | 0.27 | 0.21 | 0.01 | 0.22 | — | 1,858 | 1,858 | 0.08 | 0.02 | 0.08 | 1,866 |
| 2029 | 0.16 | 0.16 | 0.24 | 0.37 | < 0.005 | 0.01 | < 0.005 | 0.01 | 0.01 | < 0.005 | 0.01 | — | 64.5 | 64.5 | < 0.005 | < 0.005 | < 0.005 | 64.8 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2027 | 0.10 | 0.07 | 0.77 | 0.96 | < 0.005 | 0.03 | 0.06 | 0.08 | 0.02 | 0.02 | 0.04 | — | 220 | 220 | 0.01 | 0.01 | 0.06 | 224 |
| 2028 | 0.24 | 0.21 | 1.24 | 1.80 | < 0.005 | 0.04 | 0.01 | 0.05 | 0.04 | < 0.005 | 0.04 | — | 308 | 308 | 0.01 | < 0.005 | 0.01 | 309 |
| 2029 | 0.03 | 0.03 | 0.04 | 0.07 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 10.7 | 10.7 | < 0.005 | < 0.005 | < 0.005 | 10.7 |

## 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. | 1.10 | 0.71 | 0.56 | 7.26 | 0.02 | 0.02 | 1.31 | 1.33 | 0.02 | 0.34 | 0.36 | 29.3 | 2,446 | 2,475 | 3.35 | 0.15 | 2,718 | 5,324 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.99 | 0.61 | 0.60 | 6.69 | 0.02 | 0.02 | 1.31 | 1.33 | 0.02 | 0.34 | 0.36 | 29.3 | 2,401 | 2,430 | 3.35 | 0.16 | 2,716 | 5,277 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.91 | 0.64 | 0.48 | 5.17 | 0.01 | 0.02 | 0.89 | 0.91 | 0.02 | 0.23 | 0.25 | 29.3 | 1,758 | 1,788 | 3.24 | 0.11 | 2,717 | 4,619 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.17 | 0.12 | 0.09 | 0.94 | < 0.005 | < 0.005 | 0.16 | 0.17 | < 0.005 | 0.04 | 0.05 | 4.86 | 291 | 296 | 0.54 | 0.02 | 450 | 765 |

## 2.5. Operations Emissions by Sector, Unmitigated

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

| Sector | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.64 | 0.27 | 0.41 | 6.57 | 0.02 | 0.01 | 1.31 | 1.31 | 0.01 | 0.34 | 0.35 | — | 2,117 | 2,117 | 0.37 | 0.15 | 2.40 | 2,172 |
| Area | 0.44 | 0.43 | < 0.005 | 0.57 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 2.34 | 2.34 | < 0.005 | < 0.005 | — | 2.35 |
| Energy | 0.02 | 0.01 | 0.15 | 0.13 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 323 | 323 | 0.04 | < 0.005 | — | 325 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 2.36 | 4.46 | 6.82 | 0.24 | 0.01 | — | 14.6 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 27.0 | 0.00 | 27.0 | 2.70 | 0.00 | — | 94.4 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 2,716 | 2,716 |
| Total | 1.10 | 0.71 | 0.56 | 7.26 | 0.02 | 0.02 | 1.31 | 1.33 | 0.02 | 0.34 | 0.36 | 29.3 | 2,446 | 2,475 | 3.35 | 0.15 | 2,718 | 5,324 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.64 | 0.27 | 0.45 | 6.56 | 0.02 | 0.01 | 1.31 | 1.31 | 0.01 | 0.34 | 0.35 | — | 2,073 | 2,073 | 0.37 | 0.15 | 0.06 | 2,127 |
| Area | 0.34 | 0.34 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Energy | 0.02 | 0.01 | 0.15 | 0.13 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 323 | 323 | 0.04 | < 0.005 | — | 325 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 2.36 | 4.46 | 6.82 | 0.24 | 0.01 | — | 14.6 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 27.0 | 0.00 | 27.0 | 2.70 | 0.00 | — | 94.4 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 2,716 | 2,716 |
| Total | 0.99 | 0.61 | 0.60 | 6.69 | 0.02 | 0.02 | 1.31 | 1.33 | 0.02 | 0.34 | 0.36 | 29.3 | 2,401 | 2,430 | 3.35 | 0.16 | 2,716 | 5,277 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.50 | 0.24 | 0.33 | 4.77 | 0.01 | 0.01 | 0.89 | 0.90 | < 0.005 | 0.23 | 0.24 | — | 1,430 | 1,430 | 0.26 | 0.10 | 0.71 | 1,468 |
| Area | 0.39 | 0.39 | < 0.005 | 0.28 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 1.16 | 1.16 | < 0.005 | < 0.005 | — | 1.16 |
| Energy | 0.02 | 0.01 | 0.15 | 0.13 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 323 | 323 | 0.04 | < 0.005 | — | 325 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 2.36 | 4.46 | 6.82 | 0.24 | 0.01 | — | 14.6 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 27.0 | 0.00 | 27.0 | 2.70 | 0.00 | — | 94.4 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 2,716 | 2,716 |
| Total | 0.91 | 0.64 | 0.48 | 5.17 | 0.01 | 0.02 | 0.89 | 0.91 | 0.02 | 0.23 | 0.25 | 29.3 | 1,758 | 1,788 | 3.24 | 0.11 | 2,717 | 4,619 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.09 | 0.04 | 0.06 | 0.87 | < 0.005 | < 0.005 | 0.16 | 0.16 | < 0.005 | 0.04 | 0.04 | — | 237 | 237 | 0.04 | 0.02 | 0.12 | 243 |
| Area | 0.07 | 0.07 | < 0.005 | 0.05 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 0.19 | 0.19 | < 0.005 | < 0.005 | — | 0.19 |
| Energy | < 0.005 | < 0.005 | 0.03 | 0.02 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 53.4 | 53.4 | 0.01 | < 0.005 | — | 53.8 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 0.39 | 0.74 | 1.13 | 0.04 | < 0.005 | — | 2.42 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 4.47 | 0.00 | 4.47 | 0.45 | 0.00 | — | 15.6 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 450 | 450 |
| Total | 0.17 | 0.12 | 0.09 | 0.94 | < 0.005 | < 0.005 | 0.16 | 0.17 | < 0.005 | 0.04 | 0.05 | 4.86 | 291 | 296 | 0.54 | 0.02 | 450 | 765 |

# 3. Construction Emissions Details

## 3.1. Grading (2027) - Unmitigated

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

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipment | 1.84 | 1.54 | 14.1 | 17.1 | 0.03 | 0.58 | — | 0.58 | 0.54 | — | 0.54 | — | 2,960 | 2,960 | 0.12 | 0.02 | — | 2,970 |
| Dust From Material Movement | — | — | — | — | — | — | 2.99 | 2.99 | — | 1.36 | 1.36 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.11 | 0.09 | 0.85 | 1.03 | < 0.005 | 0.04 | — | 0.04 | 0.03 | — | 0.03 | — | 178 | 178 | 0.01 | < 0.005 | — | 179 |
| Dust From Material Movement | — | — | — | — | — | — | 0.18 | 0.18 | — | 0.08 | 0.08 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.02 | 0.02 | 0.16 | 0.19 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 29.5 | 29.5 | < 0.005 | < 0.005 | — | 29.6 |
| Dust From Material Movement | — | — | — | — | — | — | 0.03 | 0.03 | — | 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.05 | 0.05 | 0.03 | 0.51 | 0.00 | 0.00 | 0.12 | 0.12 | 0.00 | 0.03 | 0.03 | — | 125 | 125 | < 0.005 | < 0.005 | 0.43 | 127 |
| 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 | 1.03 | 0.14 | 9.58 | 5.87 | 0.04 | 0.09 | 1.83 | 1.92 | 0.09 | 0.49 | 0.58 | — | 6,856 | 6,856 | 0.84 | 1.09 | 13.0 | 7,215 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 7.03 | 7.03 | < 0.005 | < 0.005 | 0.01 | 7.14 |
| 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 | 0.06 | 0.01 | 0.60 | 0.35 | < 0.005 | 0.01 | 0.11 | 0.12 | 0.01 | 0.03 | 0.03 | — | 413 | 413 | 0.05 | 0.07 | 0.34 | 434 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.16 | 1.16 | < 0.005 | < 0.005 | < 0.005 | 1.18 |
| 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 | 0.01 | < 0.005 | 0.11 | 0.06 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | 0.01 | 0.01 | — | 68.4 | 68.4 | 0.01 | 0.01 | 0.06 | 71.9 |

## 3.3. Building Construction (2027) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.23 | 1.03 | 9.39 | 12.9 | 0.02 | 0.34 | — | 0.34 | 0.31 | — | 0.31 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |
| 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 | 1.23 | 1.03 | 9.39 | 12.9 | 0.02 | 0.34 | — | 0.34 | 0.31 | — | 0.31 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |
| 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 | 0.36 | 0.30 | 2.76 | 3.80 | 0.01 | 0.10 | — | 0.10 | 0.09 | — | 0.09 | — | 704 | 704 | 0.03 | 0.01 | — | 706 |
| 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 | 0.07 | 0.06 | 0.50 | 0.69 | < 0.005 | 0.02 | — | 0.02 | 0.02 | — | 0.02 | — | 116 | 116 | < 0.005 | < 0.005 | — | 117 |
| 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 | 0.01 | 0.01 | 0.01 | 0.14 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.01 | 0.01 | — | 34.8 | 34.8 | < 0.005 | < 0.005 | 0.12 | 35.4 |
| Vendor | 0.01 | < 0.005 | 0.08 | 0.05 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | < 0.005 | — | 58.0 | 58.0 | < 0.005 | 0.01 | 0.13 | 60.8 |
| 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 | 0.01 | 0.01 | 0.01 | 0.13 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.01 | 0.01 | — | 32.5 | 32.5 | < 0.005 | < 0.005 | < 0.005 | 32.9 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.01 | < 0.005 | 0.08 | 0.05 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | < 0.005 | — | 58.0 | 58.0 | < 0.005 | 0.01 | < 0.005 | 60.7 |
| 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 | 0.04 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 9.57 | 9.57 | < 0.005 | < 0.005 | 0.02 | 9.71 |
| Vendor | < 0.005 | < 0.005 | 0.02 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 17.0 | 17.0 | < 0.005 | < 0.005 | 0.02 | 17.8 |
| 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 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.58 | 1.58 | < 0.005 | < 0.005 | < 0.005 | 1.61 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 2.82 | 2.82 | < 0.005 | < 0.005 | < 0.005 | 2.95 |
| 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 (2028) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.18 | 0.99 | 8.92 | 12.9 | 0.02 | 0.30 | — | 0.30 | 0.28 | — | 0.28 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,406 |
| 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 | 1.18 | 0.99 | 8.92 | 12.9 | 0.02 | 0.30 | — | 0.30 | 0.28 | — | 0.28 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,406 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 0.85 | 0.71 | 6.39 | 9.26 | 0.02 | 0.22 | — | 0.22 | 0.20 | — | 0.20 | — | 1,717 | 1,717 | 0.07 | 0.01 | — | 1,723 |
| 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 | 0.13 | 1.17 | 1.69 | < 0.005 | 0.04 | — | 0.04 | 0.04 | — | 0.04 | — | 284 | 284 | 0.01 | < 0.005 | — | 285 |
| 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 | 0.01 | 0.01 | 0.01 | 0.13 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.01 | 0.01 | — | 34.2 | 34.2 | < 0.005 | < 0.005 | 0.11 | 34.4 |
| Vendor | 0.01 | < 0.005 | 0.07 | 0.04 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | < 0.005 | — | 56.5 | 56.5 | < 0.005 | 0.01 | 0.11 | 59.1 |
| 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 | 0.01 | 0.01 | 0.01 | 0.12 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.01 | 0.01 | — | 31.9 | 31.9 | < 0.005 | < 0.005 | < 0.005 | 32.3 |
| Vendor | 0.01 | < 0.005 | 0.08 | 0.04 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | < 0.005 | — | 56.6 | 56.6 | < 0.005 | 0.01 | < 0.005 | 59.0 |
| 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 | 0.01 | 0.01 | 0.01 | 0.08 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | 0.01 | 0.01 | — | 22.9 | 22.9 | < 0.005 | < 0.005 | 0.03 | 23.3 |
| Vendor | < 0.005 | < 0.005 | 0.05 | 0.03 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 40.5 | 40.5 | < 0.005 | 0.01 | 0.03 | 42.3 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.02 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 3.80 | 3.80 | < 0.005 | < 0.005 | 0.01 | 3.86 |
| Vendor | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 6.71 | 6.71 | < 0.005 | < 0.005 | 0.01 | 7.01 |
| 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. Building Construction (2029) - 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 | 1.15 | 0.97 | 8.58 | 12.9 | 0.02 | 0.28 | — | 0.28 | 0.25 | — | 0.25 | — | 2,397 | 2,397 | 0.10 | 0.02 | — | 2,405 |
| 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 | 0.13 | 0.20 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 37.5 | 37.5 | < 0.005 | < 0.005 | — | 37.7 |
| 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 | 0.02 | 0.04 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 6.21 | 6.21 | < 0.005 | < 0.005 | — | 6.23 |
| 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 | 0.01 | 0.01 | 0.01 | 0.11 | 0.00 | 0.00 | 0.03 | 0.03 | 0.00 | 0.01 | 0.01 | — | 31.4 | 31.4 | < 0.005 | < 0.005 | < 0.005 | 31.8 |
| Vendor | 0.01 | < 0.005 | 0.07 | 0.04 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | < 0.005 | — | 54.9 | 54.9 | < 0.005 | 0.01 | < 0.005 | 57.4 |
| 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 |
| 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 | — | 0.49 | 0.49 | < 0.005 | < 0.005 | < 0.005 | 0.50 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.86 | 0.86 | < 0.005 | < 0.005 | < 0.005 | 0.90 |
| 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 | — | 0.08 | 0.08 | < 0.005 | < 0.005 | < 0.005 | 0.08 |
| Vendor | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.14 | 0.14 | < 0.005 | < 0.005 | < 0.005 | 0.15 |
| 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. Paving (2028) - Unmitigated

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

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.75 | 0.63 | 5.85 | 8.80 | 0.01 | 0.21 | — | 0.21 | 0.19 | — | 0.19 | — | 1,350 | 1,350 | 0.05 | 0.01 | — | 1,355 |
| Paving | 0.38 | 0.38 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 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 | 0.04 | 0.03 | 0.27 | 0.41 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 63.4 | 63.4 | < 0.005 | < 0.005 | — | 63.6 |
| Paving | 0.02 | 0.02 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.05 | 0.08 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 10.5 | 10.5 | < 0.005 | < 0.005 | — | 10.5 |
| Paving | < 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 | 0.06 | 0.06 | 0.05 | 0.58 | 0.00 | 0.00 | 0.17 | 0.17 | 0.00 | 0.04 | 0.04 | — | 152 | 152 | < 0.005 | 0.01 | 0.01 | 154 |
| 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 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 7.18 | 7.18 | < 0.005 | < 0.005 | 0.01 | 7.28 |
| 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 | — | 1.19 | 1.19 | < 0.005 | < 0.005 | < 0.005 | 1.21 |
| 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 |

## 3.11. Paving (2029) - 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 | 0.74 | 0.62 | 5.73 | 8.81 | 0.01 | 0.20 | — | 0.20 | 0.18 | — | 0.18 | — | 1,350 | 1,350 | 0.05 | 0.01 | — | 1,354 |
| Paving | 0.38 | 0.38 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 0.09 | 0.14 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 21.1 | 21.1 | < 0.005 | < 0.005 | — | 21.2 |
| Paving | 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 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.02 | 0.03 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 3.50 | 3.50 | < 0.005 | < 0.005 | — | 3.51 |
| Paving | < 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 | 0.06 | 0.05 | 0.04 | 0.54 | 0.00 | 0.00 | 0.17 | 0.17 | 0.00 | 0.04 | 0.04 | — | 150 | 150 | < 0.005 | 0.01 | 0.01 | 152 |
| 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 | — | 2.35 | 2.35 | < 0.005 | < 0.005 | < 0.005 | 2.39 |
| 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 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | < 0.005 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 0.39 | 0.39 | < 0.005 | < 0.005 | < 0.005 | 0.40 |
| 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 |

## 3.13. Architectural Coating (2028) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.13 | 0.11 | 0.81 | 1.12 | < 0.005 | 0.02 | — | 0.02 | 0.01 | — | 0.01 | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| Architectural Coatings | 7.97 | 7.97 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 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 | 0.04 | 0.05 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 6.27 | 6.27 | < 0.005 | < 0.005 | — | 6.29 |
| Architectural Coatings | 0.37 | 0.37 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 1.04 | 1.04 | < 0.005 | < 0.005 | — | 1.04 |
| Architectural Coatings | 0.07 | 0.07 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 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 | < 0.005 | < 0.005 | < 0.005 | 0.02 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 6.38 | 6.38 | < 0.005 | < 0.005 | < 0.005 | 6.47 |
| 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 | — | 0.30 | 0.30 | < 0.005 | < 0.005 | < 0.005 | 0.31 |
| 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 | — | 0.05 | 0.05 | < 0.005 | < 0.005 | < 0.005 | 0.05 |
| 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 |

## 3.15. Architectural Coating (2029) - 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 | 0.12 | 0.10 | 0.79 | 1.11 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 134 | 134 | 0.01 | < 0.005 | — | 134 |
| Architectural Coatings | 7.97 | 7.97 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 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 | 0.01 | 0.02 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 2.09 | 2.09 | < 0.005 | < 0.005 | — | 2.10 |
| Architectural Coatings | 0.12 | 0.12 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 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 | < 0.005 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 0.35 | 0.35 | < 0.005 | < 0.005 | — | 0.35 |
| Architectural Coatings | 0.02 | 0.02 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.02 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 6.27 | 6.27 | < 0.005 | < 0.005 | < 0.005 | 6.36 |
| 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 | — | 0.10 | 0.10 | < 0.005 | < 0.005 | < 0.005 | 0.10 |
| 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 | — | 0.02 | 0.02 | < 0.005 | < 0.005 | < 0.005 | 0.02 |
| 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Automobile Care Center | 0.64 | 0.27 | 0.41 | 6.57 | 0.02 | 0.01 | 1.31 | 1.31 | 0.01 | 0.34 | 0.35 | — | 2,117 | 2,117 | 0.37 | 0.15 | 2.40 | 2,172 |
| 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 | 0.64 | 0.27 | 0.41 | 6.57 | 0.02 | 0.01 | 1.31 | 1.31 | 0.01 | 0.34 | 0.35 | — | 2,117 | 2,117 | 0.37 | 0.15 | 2.40 | 2,172 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Automobile Care Center | 0.64 | 0.27 | 0.45 | 6.56 | 0.02 | 0.01 | 1.31 | 1.31 | 0.01 | 0.34 | 0.35 | — | 2,073 | 2,073 | 0.37 | 0.15 | 0.06 | 2,127 |
| 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 | 0.64 | 0.27 | 0.45 | 6.56 | 0.02 | 0.01 | 1.31 | 1.31 | 0.01 | 0.34 | 0.35 | — | 2,073 | 2,073 | 0.37 | 0.15 | 0.06 | 2,127 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Automobile Care Center | 0.09 | 0.04 | 0.06 | 0.87 | < 0.005 | < 0.005 | 0.16 | 0.16 | < 0.005 | 0.04 | 0.04 | — | 237 | 237 | 0.04 | 0.02 | 0.12 | 243 |
| 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 | 0.09 | 0.04 | 0.06 | 0.87 | < 0.005 | < 0.005 | 0.16 | 0.16 | < 0.005 | 0.04 | 0.04 | — | 237 | 237 | 0.04 | 0.02 | 0.12 | 243 |

## 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Automobile Care Center | — | — | — | — | — | — | — | — | — | — | — | — | 75.9 | 75.9 | 0.01 | < 0.005 | — | 76.7 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 68.2 | 68.2 | 0.01 | < 0.005 | — | 68.9 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 144 | 144 | 0.02 | < 0.005 | — | 146 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Automobile Care Center | — | — | — | — | — | — | — | — | — | — | — | — | 75.9 | 75.9 | 0.01 | < 0.005 | — | 76.7 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 68.2 | 68.2 | 0.01 | < 0.005 | — | 68.9 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 144 | 144 | 0.02 | < 0.005 | — | 146 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Automobile Care Center | — | — | — | — | — | — | — | — | — | — | — | — | 12.6 | 12.6 | < 0.005 | < 0.005 | — | 12.7 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 11.3 | 11.3 | < 0.005 | < 0.005 | — | 11.4 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 23.9 | 23.9 | < 0.005 | < 0.005 | — | 24.1 |

### 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Automobile Care Center | 0.02 | 0.01 | 0.15 | 0.13 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 179 | 179 | 0.02 | < 0.005 | — | 179 |
| 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 | 0.02 | 0.01 | 0.15 | 0.13 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 179 | 179 | 0.02 | < 0.005 | — | 179 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Automobile Care Center | 0.02 | 0.01 | 0.15 | 0.13 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 179 | 179 | 0.02 | < 0.005 | — | 179 |
| 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 | 0.02 | 0.01 | 0.15 | 0.13 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 179 | 179 | 0.02 | < 0.005 | — | 179 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Automobile Care Center | < 0.005 | < 0.005 | 0.03 | 0.02 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 29.6 | 29.6 | < 0.005 | < 0.005 | — | 29.7 |
| 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 | < 0.005 | < 0.005 | 0.03 | 0.02 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 29.6 | 29.6 | < 0.005 | < 0.005 | — | 29.7 |

## 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 | 0.29 | 0.29 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | 0.05 | 0.05 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Landscape Equipment | 0.10 | 0.09 | < 0.005 | 0.57 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 2.34 | 2.34 | < 0.005 | < 0.005 | — | 2.35 |
| Total | 0.44 | 0.43 | < 0.005 | 0.57 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 2.34 | 2.34 | < 0.005 | < 0.005 | — | 2.35 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Consumer Products | 0.29 | 0.29 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | 0.05 | 0.05 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | 0.34 | 0.34 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Consumer Products | 0.05 | 0.05 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Architect Coatings | 0.01 | 0.01 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Landscape Equipment | 0.01 | 0.01 | < 0.005 | 0.05 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 0.19 | 0.19 | < 0.005 | < 0.005 | — | 0.19 |
| Total | 0.07 | 0.07 | < 0.005 | 0.05 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 0.19 | 0.19 | < 0.005 | < 0.005 | — | 0.19 |

## 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Automobile Care Center | — | — | — | — | — | — | — | — | — | — | — | 2.36 | 4.46 | 6.82 | 0.24 | 0.01 | — | 14.6 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 2.36 | 4.46 | 6.82 | 0.24 | 0.01 | — | 14.6 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Automobile Care Center | — | — | — | — | — | — | — | — | — | — | — | 2.36 | 4.46 | 6.82 | 0.24 | 0.01 | — | 14.6 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 2.36 | 4.46 | 6.82 | 0.24 | 0.01 | — | 14.6 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Automo Care Center | — | — | — | — | — | — | — | — | — | — | — | 0.39 | 0.74 | 1.13 | 0.04 | < 0.005 | — | 2.42 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 0.39 | 0.74 | 1.13 | 0.04 | < 0.005 | — | 2.42 |

## 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Automobile Care Center | — | — | — | — | — | — | — | — | — | — | — | 27.0 | 0.00 | 27.0 | 2.70 | 0.00 | — | 94.4 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 27.0 | 0.00 | 27.0 | 2.70 | 0.00 | — | 94.4 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Automobile Care Center | — | — | — | — | — | — | — | — | — | — | — | 27.0 | 0.00 | 27.0 | 2.70 | 0.00 | — | 94.4 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 27.0 | 0.00 | 27.0 | 2.70 | 0.00 | — | 94.4 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Automo Care Center | — | — | — | — | — | — | — | — | — | — | — | 4.47 | 0.00 | 4.47 | 0.45 | 0.00 | — | 15.6 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 4.47 | 0.00 | 4.47 | 0.45 | 0.00 | — | 15.6 |

## 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Automobile Care Center | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 2,716 | 2,716 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 2,716 | 2,716 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Automobile Care Center | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 2,716 | 2,716 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 2,716 | 2,716 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Automobile Care Center | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 450 | 450 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 450 | 450 |

## 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)

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

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

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

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

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 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 |
|---|---|---|---|---|---|---|
| Grading | Grading | 7/5/2027 | 8/3/2027 | 5.00 | 22.0 | — |
| Building Construction | Building Construction | 8/4/2027 | 1/8/2029 | 5.00 | 374 | — |
| Paving | Paving | 12/8/2028 | 1/8/2029 | 5.00 | 22.0 | — |
| Architectural Coating | Architectural Coating | 12/8/2028 | 1/8/2029 | 5.00 | 22.0 | — |

## 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 |
|---|---|---|---|---|---|---|---|
| Grading | Excavators | Diesel | Average | 1.00 | 8.00 | 36.0 | 0.38 |
| Grading | Scrapers | 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/Backhoes | Diesel | Average | 3.00 | 8.00 | 84.0 | 0.37 |
| Building Construction | Cranes | Diesel | Average | 1.00 | 7.00 | 367 | 0.29 |
| Building Construction | Forklifts | Diesel | Average | 3.00 | 8.00 | 82.0 | 0.20 |
| Building Construction | Generator Sets | Diesel | Average | 1.00 | 8.00 | 14.0 | 0.74 |
| Building Construction | Tractors/Loaders/Backhoes | Diesel | Average | 3.00 | 7.00 | 84.0 | 0.37 |
| Building Construction | Welders | Diesel | Average | 1.00 | 8.00 | 46.0 | 0.45 |
| Paving | Cement and Mortar Mixers | Diesel | Average | 2.00 | 6.00 | 10.0 | 0.56 |
| Paving | Pavers | Diesel | Average | 1.00 | 8.00 | 81.0 | 0.42 |
| Paving | Paving Equipment | Diesel | Average | 2.00 | 6.00 | 89.0 | 0.36 |
| Paving | Rollers | Diesel | Average | 2.00 | 6.00 | 36.0 | 0.38 |
| Paving | Tractors/Loaders/Backhoes | Diesel | Average | 1.00 | 8.00 | 84.0 | 0.37 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 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 |
|---|---|---|---|---|
| Grading | — | — | — | — |
| Grading | Worker | 15.0 | 11.7 | LDA,LDT1,LDT2 |
| Grading | Vendor | — | 8.40 | HHDT,MHDT |
| Grading | Hauling | 96.6 | 20.0 | HHDT |
| Grading | Onsite truck | — | — | HHDT |
| Building Construction | — | — | — | — |
| Building Construction | Worker | 4.19 | 11.7 | LDA,LDT1,LDT2 |
| Building Construction | Vendor | 2.15 | 8.40 | HHDT,MHDT |
| Building Construction | Hauling | 0.00 | 20.0 | HHDT |
| Building Construction | Onsite truck | — | — | HHDT |
| Paving | — | — | — | — |
| Paving | Worker | 20.0 | 11.7 | LDA,LDT1,LDT2 |
| Paving | Vendor | — | 8.40 | HHDT,MHDT |
| Paving | Hauling | 0.00 | 20.0 | HHDT |
| Paving | Onsite truck | — | — | HHDT |
| Architectural Coating | — | — | — | — |
| Architectural Coating | Worker | 0.84 | 11.7 | LDA,LDT1,LDT2 |
| Architectural Coating | Vendor | — | 8.40 | 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 | 19,650 | 6,550 | 8,364 |

## 5.6. Dust Mitigation

### 5.6.1. Construction Earthmoving Activities

| Phase Name | Material Imported (Cubic Yards) | Material Exported (Cubic Yards) | Acres Graded (acres) | Material Demolished (sq. ft.) | Acres Paved (acres) |
|---|---|---|---|---|---|
| Grading | 9,000 | 8,000 | 33.0 | 0.00 | — |
| Paving | 0.00 | 0.00 | 0.00 | 0.00 | 3.20 |

### 5.6.2. Construction Earthmoving Control Strategies

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

## 5.7. Construction Paving

| Land Use | Area Paved (acres) | % Asphalt |
|---|---|---|
| Automobile Care Center | 0.00 | 0% |
| Parking Lot | 3.20 | 100% |

## 5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

| Year | kWh per Year | CO2 | CH4 | N2O |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 2027 | 0.00 | 204 | 0.03 | < 0.005 |
| 2028 | 0.00 | 204 | 0.03 | < 0.005 |
| 2029 | 0.00 | 204 | 0.03 | < 0.005 |

## 5.9. Operational Mobile Sources

### 5.9.1. Unmitigated

| Land Use Type | Trips/Weekday | Trips/Saturday | Trips/Sunday | Trips/Year | VMT/Weekday | VMT/Saturday | VMT/Sunday | VMT/Year |
|---|---|---|---|---|---|---|---|---|
| Automobile Care Center | 176 | 176 | 176 | 64,263 | 937 | 1,672 | 1,672 | 418,599 |
| 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 | 19,650 | 6,550 | 8,364 |

### 5.10.3. Landscape Equipment

| Season | Unit | Value |
|---|---|---|
| Snow Days | day/yr | 0.00 |
| Summer Days | day/yr | 180 |

## 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) |
|---|---|---|---|---|---|
| Automobile Care Center | 135,825 | 204 | 0.0330 | 0.0040 | 557,324 |
| Parking Lot | 122,107 | 204 | 0.0330 | 0.0040 | 0.00 |

## 5.12. Operational Water and Wastewater Consumption

### 5.12.1. Unmitigated

| Land Use | Indoor Water (gal/year) | Outdoor Water (gal/year) |
|---|---|---|
| Automobile Care Center | 1,232,463 | 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) |
|---|---|---|
| Automobile Care Center | 50.0 | — |
| 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 |
|---|---|---|---|---|---|---|---|
| Automobile Care Center | Other commercial A/C and heat pumps | R-410A | 2,088 | < 0.005 | 4.00 | 4.00 | 18.0 |
| Automobile Care Center | 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) |
|---|---|---|---|

## 8. User Changes to Default Data

| Screen | Justification |
|---|---|
| Land Use | Project will construct a 13,100 sq ft building on a 3.5-acre site that is dedicated to District operations, visitor, employee, and bus parking. It is assumed that the remainder of the Project Site would be entirely paved. |
| Construction: Construction Phases | Construction of the project is anticipated to take a total of 18 months, with the grading/site preparation phase being expected to take approximately one month and building construction is expected to take approximately 17 months, Paving and architectural coatings assumed to be taking place concurrently with the final month of building construction. |
| Construction: Off-Road Equipment | Construction equipment provided in Project Description. |
| Operations: Vehicle Data | Project daily trips informed by Traffic and CEQA and NEPA Assessment Memo prepared by Fehr & Peers |
| Operations: Fleet Mix | Project will generate 176 daily trips; 112 of these trips is dedicated to employee trips and 64 of these trips are dedicated to buses pulling entering and exiting the facility. Parking lot is not a use that generates trips and has been zeroed out to reflect this. |

## Look-Up Tool Results

## 2022 CARB & CAPCOA Gasoline Service Station Industrywide Risk Assessment Look-up Tool
## Version 1.0 - February 18, 2022

| Required Value | User Defined Input | Instructions |
|---|---|---|
| Annual Throughput (gallons/year) | 330000 | Enter your gas station's annual throughput in gallons of gasoline dispensed per year. |
| Hourly Dispensing Throughput (gallons/hour) | 500 | The tool will calculate the maximum hourly vehicle fueling throughput based on annual throughput as defined by Table 10 of the 2020 Gasoline Service Station Industrywide Risk Assessment Technical Guidance Document (Technical Guidance). If a different value is desired please enter it into cell L4. |
| Hourly Loading Throughput (gallons/hour) | 8800 | The tool will calculate the maximum hourly loading throughput based on annual throughput as defined by Table 10 of the Technical Guidance. If a different value is desired please enter it into cell L5. |
| Meteorological Data | San Jose | Select appropriate meteorological data. Met sets provided include 2 rural (Redding and Lancaster) and 4 urban (Fresno, Ontario, San Diego, and San Jose) locations. Use whichever best correlates to your location. If you would like to use site-specific meteorological data please refer to the Variable Met Tool. |
| Distance to Nearest Resident (meters) | 452 | Enter the distance to the nearest residential receptor in meters as measured from the edge of the station canopy. Please note that the value must be between 10 and 1000 meters. The distance you input will round down to the nearest receptor distance used in the Technical Guidance (e.g., 19m will return value at 10m distance). |
| Distance to Nearest Business (meters) | 15 | Enter the distance to the nearest worker receptor in meters as measured from the edge of the station canopy. Please note that the value must be between 10 and 1000 meters. The distance you input will round down to the nearest receptor distance used in the Technical Guidance (e.g., 19m will return value at 10m distance). |
| Distance to Acute Receptor (meters) | 15 | Enter the distance where acute impacts are expected in meters as measured from the edge of the station canopy. This can be the distance to the property boundary, nearest resident, nearest worker, or any other user defined location. Please note that the value must be between 10 and 1000 meters. The distance you input will round down to the nearest receptor distance used in the Technical Guidance (e.g., 19m will return value at 10m distance). |
| Control Scenario | EVR Phase I & EVR Phase II | Select the appropriate control scenario for your gas station. Please refer to technical Guidance for an explanation of the different control scenarios. Almost all gas stations in California are equipped with EVR Phase I and EVR Phase II controls. |
| Include Building Downwash Adjustments | no | Building downwash may over estimate risk results. High results should be investigated further through site-specific health risk assessment. |
| | | |
| Risk Value | Results | |
| Max Residential Cancer Risk (chances/million) | 0.01 | |
| Max Worker Cancer Risk (chances/million) | 0.21 | |
| Chronic HI | 0.01 | |
| Acute HI | 0.54 | 5/5/2025 |

According to the Gasoline Service Station Industrywide Risk Assessment Technical Guidance document, a gasoline service station is any new or existing retail motor vehicle fueling facility where gasoline is transferred from underground storage tanks to motor vehicles, fuel containers, and other gasoline-powered equipment. These retail gas stations may include additional fuel types such as natural gas, propane or diesel; however, the Technical Guidance only applies to the gasoline dispensed at those stations. Presently, neither CARB nor CAPCOA provide a Look-up Tool that estimates health risks associated with diesel fuel dispensing at sensitive receptors. Although the Project proposes to utilize diesel fuel and the Look-up Tool does not analyze risk values associated with diesel fueling, the Look-up Tool is utilized for this analysis to help estimate the Project's potential health risks to sensitive receptors. Both gasoline and diesel fueling stations release vapors, but gasoline stations generally have higher levels of volatile organic compounds (VOCs). Gasoline contains a higher concentration of VOCs, which can contribute to smog formation and have harmful health effects. Diesel is less volatile than gasoline, meaning it evaporates less readily and releases fewer vapors into the air. Thus, this analysis serves as a conservative estimation of health risk values on sensitive receptors.