
APPENDIX A

AIR QUALITY AND GREENHOUSE GAS BACKGROUND AND MODELING DATA

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1. AIR QUALITY AND GREENHOUSE GAS BACKGROUND AND MODELING DATA

1.1 AIR QUALITY

1.1.1 Air Quality Regulatory Setting

The proposed project has the potential to release gaseous emissions of criteria pollutants and dust into the ambient air; therefore, it falls under the ambient air quality standards promulgated at the local, state, and federal levels. The project site is in the Mountain Counties Air Basin(MCAB), specifically within Amador County, and is subject to the rules and regulations imposed by the Amador Air District. However, Amador Air District does not have adopted California Environmental Quality Act (CEQA) thresholds for air quality or greenhouse gas (GHG) emissions. Therefore, the analysis in the Initial Study/Mitigated Negative Declaration (IS/MND) is based on the methodology recommended by the Sacramento Metropolitan Air Quality Management District (SMAQMD), in lieu of Amador County-specific guidance. Additionally, both Amador Air District and SMAQMD report to California Air Resources board (CARB), and all criteria emissions are also governed by the California and national Ambient Air Quality Standards (AAQS). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

AMBIENT AIR QUALITY STANDARDS

The Clean Air Act (CAA) was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS, based on even greater health and welfare concerns.

These National AAQS and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect

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“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.

Both California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 1, *Ambient Air Quality Standards for Criteria Pollutants*, these pollutants include ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), coarse inhalable particulate matter (PM₁₀), fine inhalable particulate matter (PM_{2.5}), and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard ¹	Federal Primary Standard ²	Major Pollutant Sources
Ozone (O ₃) ³	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO ₂) ⁴	Annual Arithmetic Mean	*	0.010 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	*	
Respirable Coarse Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 µg/m ³	150 µg/m ³	

Table 1 **Ambient Air Quality Standards for Criteria Pollutants**

Pollutant	Averaging Time	California Standard ¹	Federal Primary Standard ²	Major Pollutant Sources
Respirable Fine Particulate Matter (PM _{2.5}) ^{5,6}	Annual Arithmetic Mean	12 µg/m ³	9 µg/m ³	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 µg/m ³	
Lead (Pb)	30-Day Average	1.5 µg/m ³	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m ³	
	Rolling 3-Month Average	*	0.15 µg/m ³	
Sulfates (SO ₄) ⁷	24 hours	25 µg/m ³	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	Hydrogen sulfide (H ₂ S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas and can be emitted as the result of geothermal energy exploitation.

Table 1 **Ambient Air Quality Standards for Criteria Pollutants**

Pollutant	Averaging Time	California Standard ¹	Federal Primary Standard ²	Major Pollutant Sources
Vinyl Chloride	24 hours	0.01 ppm	No Federal Standard	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: CARB 2024, USEPA 2025a.

Notes: ppm: parts per million; $\mu\text{g}/\text{m}^3$: micrograms per cubic meter

* Standard has not been established for this pollutant/duration by this entity.

- 1 California standards for O_3 , CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2 , and particulate matter (PM_{10} , $\text{PM}_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- 2 National standards (other than O_3 , PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10} , the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above $150 \mu\text{g}/\text{m}^3$ is equal to or less than one. For $\text{PM}_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
- 3 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
- 4 On December 27, 2024, the secondary annual SO_2 standard was revised to an annual average, averaged over three consecutive years, with a level of 10 parts per billion (ppb).
- 5 On December 14, 2012, the national annual $\text{PM}_{2.5}$ primary standard was lowered from $15 \mu\text{g}/\text{m}^3$ to $12.0 \mu\text{g}/\text{m}^3$. The existing national 24-hour $\text{PM}_{2.5}$ standards (primary and secondary) were retained at $35 \mu\text{g}/\text{m}^3$, as was the annual secondary standard of $15 \mu\text{g}/\text{m}^3$. The existing 24-hour PM_{10} standards (primary and secondary) of $150 \mu\text{g}/\text{m}^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
- 6 On February 7, 2024, the national annual $\text{PM}_{2.5}$ standard was lowered from $12 \mu\text{g}/\text{m}^3$ to $9 \mu\text{g}/\text{m}^3$. The existing national 24-hour $\text{PM}_{2.5}$ standards (primary and secondary), secondary annual $\text{PM}_{2.5}$ standard, and PM_{10} standards (primary and secondary) were retained.
- 7 On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- AB 1493: Pavley Fuel Efficiency Standards
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building and Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

AIR POLLUTANTS OF CONCERN

Criteria Air Pollutants

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. Air pollutants are categorized as primary or secondary pollutants. Primary air pollutants are those that are emitted directly from sources and include CO, VOC, NO₂, SO_x, PM₁₀, PM_{2.5}, and Pb. Of these, CO, SO₂, NO₂, PM₁₀, and PM_{2.5} are “criteria air pollutants,” which means that ambient air quality standards (AAQS) have been established for them. VOC and oxides of nitrogen (NO_x) are air pollutant precursors that form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O₃) and NO₂ are the principal secondary pollutants. A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

Carbon Monoxide (CO) is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. The highest ambient CO concentrations are generally found near (300 to 600 feet) traffic-congested corridors and intersections. Overall, CO emissions are decreasing because of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels; therefore, California has required the use of oxygenated gasoline in the winter months to reduce CO emissions (Amador County 2016).

Reactive Organic Gases (ROGs)/Volatile Organic Compounds (VOCs) are compounds composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of ROGs. Other sources of ROGs include evaporative emissions from paints and solvents, the application of asphalt paving, and the use of household consumer products such as aerosols. Adverse effects on human health are not caused directly by ROGs, but rather by reactions of ROGs to form secondary pollutants such as O₃. There are no AAQS established for ROGs. However, because they contribute to the formation of O₃, SMAQMD has established an operational significance threshold for this pollutant (SMAQMD 2020a).

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Nitrogen Oxides (NO_x) are a by-product of fuel combustion and contribute to the formation of O₃, PM₁₀, and PM_{2.5}. NO₂ is a gas that is a product of the combustion of fossil fuels generated from vehicles and stationary sources, such as power plants and boilers. NO₂ can cause lung damage and is a type of NO_x that is a principal contributor to ozone and smog production (Amador County 2016).

Sulfur Dioxide (SO₂) is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels, with the primary source being power plants and heavy industry that use coal or oil as fuel. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO₂. The human health effects of SO₂ include lung disease and breathing problems for asthmatics. When SO₂ forms sulfates (SO₄) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_x). Thus, SO₂ is both a primary and secondary criteria air pollutant. SO₂ in the atmosphere contributes to the formation of acid rain. In the Mountain Counties Air Basin (MCAB), there is relatively little combustion of coal and oil; therefore, SO₂ is less of a concern than in other parts of the country (Amador County 2016).

Suspended Particulate Matter (PM₁₀ and PM_{2.5}) consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mist. Natural sources of PM include windblown dust and ocean spray. Secondary particles result from gases that are transformed into particles through physical and chemical processes in the atmosphere.

The size of PM is directly linked to the potential for causing health problems. The United States Environmental Protection Agency (USEPA) is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects, such as aggravation of respiratory and cardiovascular disease, lung disease, decreased lung function, asthma attacks, and certain cardiovascular problems, such as heart attacks and irregular heartbeat. Individuals particularly sensitive to fine particle exposure include older adults, people with heart and lung disease, and children. USEPA groups PM into two categories, coarse PM or PM₁₀, and fine PM or PM_{2.5}, as described below.

PM₁₀, such as found near roadways and dusty industries, are 10 micrometers or smaller in diameter. Sources of PM₁₀ include crushing or grinding operations and dust from paved or unpaved roads. Control of PM₁₀ is primarily achieved through the control of dust at construction and industrial sites, the cleaning of paved roads, and the wetting or paving of frequently used unpaved roads.

PM_{2.5}, such as found in smoke and haze, are 2.5 micrometers or smaller in diameter. PM_{2.5} poses an increased health risk because they can deposit deep in the lungs and contain substances that are particularly harmful to human health. Sources of PM_{2.5} include all types of combustion activities, such as motor vehicles, power plants, wood burning, and certain industrial processes. PM_{2.5} is the major cause of reduced visibility (haze) in California (Amador County 2016).

Ozone (O₃) is a colorless, odorless gas that primarily exists in the upper atmosphere (stratosphere) as the ozone layer and in the lower atmosphere (troposphere) as a pollutant. Tropospheric ozone is a principal cause of lung and eye irritation in the urban environment and is the principal component of smog, which is formed in the troposphere through a series of reactions involving ROG and NO_x in the presence of sunlight. Therefore, ROG and NO_x are precursors of ozone. ROG and NO_x emissions are both considered critical in ozone formation. Control strategies for ozone have focused on reducing these emissions from vehicles, industrial processes using solvents and coatings, and consumer products. Ozone concentrations are generally highest in the summer, when atmospheric inversions are greatest, and sunlight is abundant and temperatures are high (Amador County 2016).

Lead (Pb) is a highly toxic metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been lead anti-knock additives in gasoline and industrial sources. As a result of the phasing out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Additionally, lead-based paint is a health hazard when it deteriorates by peeling, chipping, or cracking; or generates lead dust when scraped, sanded, or heated (Amador County 2016).

Table 2, *Criteria Air Pollutant Health Effects Summary*, summarizes the potential health effects associated with the criteria air pollutants.

Table 2 Criteria Air Pollutant Health Effects Summary

Pollutant	Health Effects	Examples of Sources
Carbon Monoxide (CO)	▪ Chest pain in heart patients ▪ Headaches, nausea ▪ Reduced mental alertness ▪ Death at very high levels	Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Ozone (O ₃)	▪ Cough, chest tightness ▪ Difficulty taking a deep breath ▪ Worsened asthma symptoms ▪ Lung inflammation	Atmospheric reaction of organic gases with nitrogen oxides in sunlight
Nitrogen Dioxide (NO ₂)	▪ Increased response to allergens ▪ Aggravation of respiratory illness	Same as carbon monoxide sources
Particulate Matter (PM ₁₀ and PM _{2.5})	▪ Hospitalizations for worsened heart diseases ▪ Emergency room visits for asthma ▪ Premature death	Cars and trucks (particularly diesels) Fireplaces and woodstoves Windblown dust from overlays, agriculture, and construction
Sulfur Dioxide (SO ₂)	▪ Aggravation of respiratory disease (e.g., asthma and emphysema) ▪ Reduced lung function	Combustion of sulfur-containing fossil fuels, smelting of sulfur-

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Pollutant	Health Effects	Examples of Sources
		bearing metal ores, and industrial processes
Lead (Pb)	- Behavioral and learning disabilities in children - Nervous system impairment	Contaminated soil

Source: CARB 2026c.

Toxic Air Contaminants

The public's exposure to air pollutants classified as toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant (HAP) pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code §7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions. To date, CARB has established formal control measures for 11 TACs, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, toxic air contaminant emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment and, if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). 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 relatively few compounds, the most important being particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered 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.

CARB has promulgated the following specific rules to limit TAC emissions:

- 13 CCR Chapter 10, Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- 13 CCR Chapter 10, Section 2480, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- 13 CCR Section 2477 and Article 8, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

Community Risk

In addition, to reduce exposure to TACs, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) to provide guidance regarding the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when placing sensitive receptors near existing pollution sources. CARB's recommendations on the siting of new sensitive land uses were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that proximity to air pollution sources substantially increases exposure and the potential for adverse health effects. There are three carcinogenic toxic air contaminants that constitute the majority of the known health risks from motor vehicle traffic, DPM from trucks, and benzene and 1,3-butadiene from passenger vehicles. CARB recommendations are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

Amador Air District

Amador Air District is the agency responsible for ensuring that the national and California AAQS are attained and maintained in the MCAB by regulating air pollutant emissions from stationary

and industrial sources. These responsibilities are met by adopting and enforcing Rules and Regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, and inspecting stationary sources of air pollutants.

Amador Air District's Rules and Regulations include, but are not limited to:

- Rule 202 – Visible emissions
- Rule 205 – Nuisance
- Rule 207 – Particulate Matter
- Rule 210 – Specific Contaminants (sulfur compounds, combustion contaminants)
- Rule 218 – Fugitive Dust Emissions
- Regulation IV – Authority to Construct
- Regulation V – Permit to Operate

Amador County Transportation Commission

The Amador County Transportation Commission (ACTC) is the State-designated Regional Transportation Planning Agency (RTPA) and Local Transportation Commission (LTC) serving the Amador region (ACTC 2026). As the region's LTC, ACTC oversees use of local transportation funds pursuant to the State's Transportation Development Act (TDA) for funding public transit and other purposes.

Additionally, ACTC is responsible for adopting and maintaining the County's Regional Transportation Plan (RTP). The latest 2020 RTP Update reflects progress toward implementing the 2015 RTP and ensures compliance with the California Transportation Commission's 2017 Regional Transportation Guidelines (ACTC 2020). The RTP identifies the region's short-term and long-range transportation needs and establishes policies, programs, and projects designed to meet those needs for the next 20 years.

1.1.2 Existing Conditions

MOUNTAIN COUNTIES AIR BASIN CONDITIONS

California is divided geographically into air basins for the purpose of managing the air resources of the state on a regional basis. An air basin generally has similar meteorological and geographic conditions throughout. The state is divided into 15 air basins and Amador County is in the MCAB.

The discussion below identifies the natural factors in the MCAB that affect air pollution and the regulatory framework that is potentially applicable to the proposed project. Air pollutants of

concern are criteria air pollutants and TACs. Federal, State, and local air districts have adopted laws and regulations intended to control and improve air quality.

AAD is the regional air quality agency for the MCAB, which comprises Plumas, Sierra, Nevada, Amador, Calaveras, Tuolumne, Mariposa, Placer (middle portion), and El Dorado (western portion) Counties. 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.

Meteorology

The MCAB lies along the northern Sierra Nevada Mountain range, covering an area of approximately 11,000 square miles. Elevations in Amador County range from over 9,000 feet at the Sierra crest down to several hundred feet above sea level at the county's boundary with Sacramento County. Topography is highly variable throughout the county and includes rugged mountain peaks and valleys with extreme slopes and elevation variations in the Sierra range, as well as rolling foothills to the west. The general climate of the MCAB varies considerably with elevation and proximity to the Sierra range. The terrain features of the MCAB allow for several climates to exist in relative proximity (Amador County 2016).

Wind Patterns

The terrain of mountains and hills results in a wide variation in rainfall, temperature, and localized winds throughout the MCAB. Temperature variations have an important influence on basin wind flow, dispersion along mountain ridges, vertical air mixing, and photochemistry (Amador County 2016).

Temperature

Winter temperatures in the mountains can be below freezing for weeks at a time, and substantial amounts of snow can accumulate, but in the western foothills, winter temperatures usually drop below freezing only at night and precipitation is mixed as rain or light snow. In the summer, temperatures in the mountains are mild, with daytime highs in the 70s to low 80s (degrees Fahrenheit [°F]), but the western end of the county can routinely exceed 100°F. From an air quality perspective, the topography and meteorology of the MCAB combine such that local conditions are the predominate factor in determining the effect of emissions in the MCAB (Amador County 2016).

Precipitation

The Sierra Nevada Mountain range receives large amounts of precipitation from storms moving inland from the Pacific Ocean in the winter, with lesser amounts from intermittent "Monsoonal" moisture flows from the south and cumulus buildup in the summer. Precipitation amounts are

high in the highest mountain elevations but decline rapidly toward the western portion of the MCAB (Amador County 2016).

Wind Circulation

Regional airflows are affected by the mountains and hills, which direct surface air flows, cause shallow vertical mixing, and create areas of high pollutant concentrations by hindering dispersion (Amador County 2016).

Inversions

Inversion layers, where warm air inversely overlays cooler air, frequently occur in the MCAB and trap pollutants close to the ground. During summer's longer daylight hours, stagnant air, high temperatures, and plentiful sunlight provide the conditions and energy for the photochemical reaction between ROG_s and NO_x that results in the formation of ozone. Because of its long formation time, ozone is a regional pollutant rather than a local hotspot problem. In the summer, the strong upwind valley air flowing into the basin from the Central Valley to the west is an effective transport medium for ozone precursors and ozone generated in the Bay Area and the Sacramento and San Joaquin Valleys (Amador County 2016).

AREA DESIGNATIONS

The AQMP provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards through the State Implementation Plan (SIP). Areas are classified as attainment or nonattainment areas for particular pollutants, depending on whether they meet ambient air quality standards. Severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to severe and extreme.

- **Unclassified:** a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- **Attainment:** a pollutant is in attainment if the CAAQS for that pollutant was not violated at any site in the area during a three-year period.
- **Nonattainment:** a pollutant is in nonattainment if there was at least one violation of a state AAQS for that pollutant in the area.
- **Nonattainment/Transitional:** a subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

The attainment status for the MCAB is shown in Table 3, *Attainment Status of Criteria Pollutants in the Mountain Counties Air Basin*.

Table 3 Attainment Status of Criteria Pollutants in the Mountain Counties Air Basin

Pollutant	State	Federal
Ozone – 1-hour	Nonattainment	No Federal Standard
Ozone – 8-hour	Nonattainment	Nonattainment
PM ₁₀	Unclassified	Unclassified
PM _{2.5}	Unclassified	Unclassified/Attainment
CO	Unclassified	Unclassified/Attainment
NO ₂	Attainment	Unclassified/Attainment
SO ₂	Attainment	Unclassified/Attainment
Lead	Attainment	Unclassified/Attainment
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2026a.

EXISTING AMBIENT AIR QUALITY

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project area have been documented and measured by the Amador Air District. The nearest air quality monitoring station closest to the project site is the Jackson-Clinton Road Monitoring Station, which monitors O₃. The San Andreas-Gold Strike Road Monitoring Station was used to supplement data on PM_{2.5} and PM₁₀. Table 4, *Ambient Air Quality Monitoring Summary* shows rare violations of the state and federal O₃ standards, state PM₁₀ standards, and federal PM_{2.5} standards in the last three years.

Table 4 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations ^{1,2}		
	2023	2024	2025
Ozone (O₃)			
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	0	1	0
State & Federal 8-hour ≥ 0.070 ppm (days exceed threshold)	0	6	0
Max. 1-Hour Conc. (ppm)	0.079	0.101	0.079
Max. 8-Hour Conc. (ppm)	0.064	0.083	0.069
Coarse Particulates (PM₁₀)			
State 24-Hour > 50 µg/m ³ (days exceed threshold)	0	0	1
Federal 24-Hour > 150 µg/m ³ (days exceed threshold)	0	0	0
Max. 24-Hour Conc. (µg/m ³)	43.8	33.5	58.8
Fine Particulates (PM_{2.5})			
Federal 24-Hour > 35 µg/m ³ (days exceed threshold)	0	0	0
Max. 24-Hour Conc. (µg/m ³)	29.3	16.6	14.9

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Source: CARB 2026d.

Notes: ppm = parts per million; ppb = parts per billion; $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; * = Data not available

1. Data for O_3 from the Jackson-Clinton Road Monitoring Station and data for $\text{PM}_{2.5}$, and PM_{10} from San Andreas-Gold Strike Road Monitoring Station.
2. Most recent data available as of July 2026.

EXISTING EMISSIONS

There are eight existing operational ACUSD school campuses that are part of the proposed project. Thus, the project site currently generates criteria air pollutant emissions from area sources (e.g., consumer cleaning products, landscaping equipment, paints), energy sources (e.g., natural gas used for heating), and mobile sources (e.g., staff, student, and visitor vehicle trips) from existing school campuses.

SENSITIVE RECEPTORS

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups for the purposes of air quality analysis include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are also 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. Other sensitive receptors for the purposes of air quality analysis include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although 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. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent since the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the population.

Argonaut High School Site Improvements

Sensitive receptors to the Argonaut HS campus pertaining to the following air quality analysis include the single-family residences to the north along Westview Drive.

Lone Junior High School Site Improvements

Sensitive receptors to the Lone Junior HS campus include the single-family residences to the north along S. Mills Street and Catholic Cemetery to the east.

Amador High School Site Improvements

Sensitive receptors to the Amador ES campus include the single-family residences to the north along Sutter lone Road, to the east along Spanish Street, and to the west along Oro Madre Way, and Sutter Creek ES directly to the north.

1.1.3 Thresholds of Significance

The analysis of the proposed project's air quality impacts follows the guidance and methodologies recommended in SMAQMD's *CEQA Air Quality Guidelines* (CEQA Guide) (SMAQMD 2009). CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. SMAQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation, in addition to screening criteria to determine whether impacts would be less than significant based on project size.

REGIONAL SIGNIFICANCE THRESHOLDS

CEQA allows the significance criteria established by the applicable air quality management district or air pollution control district to be used to assess impacts of a project on air quality. Since Amador Air District does not have adopted CEQA thresholds for air quality, the SMAQMD thresholds of significance were used in the following analysis.

Table 5, *SMAQMD Significance Thresholds*, shows SMAQMD's thresholds of significance for criteria pollutant emissions and criteria air pollutant precursors, including ROG, NO_x, PM₁₀, and PM_{2.5}. Development projects below the regional significance thresholds are not expected to generate sufficient criteria pollutant emissions to violate any air quality standard, contribute substantially to an existing or projected air quality violation, or substantially contribute to health impacts.

Table 5 **SMAQMD Significance Thresholds**

Air Pollutant	Construction Phase	Operational Phase
Reactive Organic Gases (ROG)	NA	65 lbs/day
Nitrogen Oxides (NO _x)	85 lbs/day	65 lbs/day
Particulates (PM ₁₀)	0. If all feasible BACT/ BCECPs are applied, then 80 lbs/day.	0. If all feasible BACT/ BCECPs are applied, then 80 lbs/day.
Particulates (PM _{2.5})	0. If all feasible BACT/ BCECPs are applied, then 82 lbs/day.	0. If all feasible BACT/ BCECPs are applied, then 82 lbs/day.

Source: SMAQMD 2020a.

Screening

SMAQMD has developed screening criteria that can be used to qualitatively assess whether a project would exceed the significance thresholds. According to SMAQMD's CEQA Guide, a project that does not exceed the screening level and meets all the screening parameters will be considered to have a less-than-significant impact on air quality (SMAQMD 2009). For construction phase impacts, projects that are 35 acres or less in size generally will not exceed SMAQMD's construction NO_x or particulate matter thresholds of significance, if the project implements SMAQMD's Basic Construction Emission Control Practices.¹ In order to use the screening criteria for construction, the project cannot include any of the following parameters (SMAQMD 2020a):

- Buildings more than 4 stories tall
- Demolition activities
- Major trenching activities
- A construction schedule that is unusually compact, fast-paced, or involves more than 2 phases (i.e., grading, paving, building construction, and architectural coatings) occurring simultaneously
- Cut-and-fill operations (moving earth with haul trucks and/or flattening or terracing hills)
- Import or export of soil materials that will require a considerable amount of haul truck activity

The high school land use screening levels for operational impacts are as follows. If a high school project is below these sizes, it is considered to be below the respective thresholds of significance for each pollutant including NO_x, Reactive Organic Gases (ROGs), PM₁₀, and PM_{2.5} (SMAQMD 2018).²

- **Ozone Precursors** (NO_x and ROG): 370,000 square feet or 2,780 students
- **PM**: 735,000 square feet or 5,525 students

SMAQMD notes that the operational screening criteria should not be used to evaluate operational emissions from projects that have one or more of the following characteristics (SMAQMD 2020b):

- The project will include wood stoves or wood-burning appliances

¹ Note that SMAQMD has not adopted an emission threshold for construction-generated ROG emissions (SMAQMD 2020a). Therefore, no screening criteria are available for ROG emissions.

² Ozone is formed each day when emissions of ozone precursors, ROG and NO_x, react in the presence of sunlight. Therefore, SMAQMD uses a single screening level that applies to the significance criteria of both ROG and NO_x based on their role as ozone precursors. The PM screening levels represent PM₁₀ emissions since the PM₁₀ emissions level will exceed the significance threshold before PM_{2.5} emissions levels will be exceeded (SMAQMD 2018).

- The project does not include BMPs for PM emissions
- Project trip generation rates are expected to be greater than the default trip rates in CalEEMod
- The vehicle fleet mix for the project is expected to be substantially different from the average vehicle fleet mix for Sacramento County. For example, the fleet mix associated with an industrial land use project will likely consist of a higher portion of heavy-duty trucks
- The project will include mixed-use development
- The project will include any industrial land use types (possibly including stationary sources of emissions).

SMAQMD also notes that use of the screening levels for PM₁₀ and PM_{2.5} assume the project includes operational best management practices (BMPs). Because these practices are generally required by existing regulations, SMAQMD states that they should not be incorporated as mitigation measures. The full text of these BMPs and further information regarding the air quality regulatory setting can be found in Appendix B. The following summarizes requirements of the BMPs (SMAQMD 2020c):

- Compliance with District rules that control operational PM and NO_x emissions.
- Compliance with mandatory measures in the California Building Energy Efficiency Standards (Title 24, Part 6)
- Compliance with mandatory measures in the California Green Building Code (Title 24, Part 11)
- Compliance with anti-idling regulations for diesel powered commercial motor vehicles³

TOXIC AIR CONTAMINANTS

In addition to criteria air pollutants, both the State and federal government regulate the release of TACs. The California Health and Safety Code define a TAC as “an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health.” A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal CAA (42 USC Section 7412[b]) is a TAC. Under State law, CalEPA, acting through CARB, is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

³ SMAQMD notes that this BMP is applicable to non-residential land use projects (retail and industrial). This BMP is not considered applicable to the proposed project because the project would not generate trips from vehicles of greater than 10,000 gross vehicular weight rating during operational activities (SMAQMD 2020c).

Health Effects of Criteria Air Pollutants

If projects exceed the significance criteria in Table 5, emissions would cumulatively contribute to the nonattainment status and would contribute in elevating health effects associated to these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would further contribute to reducing possible health effects related to criteria air pollutants.

However, for projects that exceed the thresholds in Table 5, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment since mass emissions are not correlated with concentrations of emissions or how many additional individuals in the MCAB would be affected by these health effects.

SMAQMD has released its *Guidance to Address the Friant Ranch Ruling for CEQA Projects in the Sac Metro Air District* in October 2020 to provide methodology to assess the specific correlation between mass emissions generated and the effect of health raised in *Sierra Club v. County of Fresno* (Friant Ranch, L.P.) (2018) 6 Cal.5th 502, Case No. S21978 (SMAQMD 2020b). This guidance document was developed with input from Yolo-Solano AQMD, Placer County Air Pollution Control District (APCD), El Dorado County AQMD, and Feather River AQMD.

The Friant Ranch guidance document provides insight on the health effects that may result from a project emitting at the maximum thresholds of significance (TOS) levels in the Five-Air-District Region for NO_x, ROG, PM, CO, and SO_x. It includes two look-up tables for estimating health effects for strategic areas where growth exceeding the TOS level is anticipated. The Minor Project Health Effects Screening Tool uses the location of a project to estimate interpolated health effects based on the TOS level of 82 pounds per day (lbs/day) and the health effects of 41 hypothetical sources. The Strategic Area Project Screening Modeling tool uses the NO_x, ROG, and PM_{2.5} emissions of a project to interpolate health effects based on the health effects of six potential strategic area project locations at levels two and eight times the 82 lbs/day TOS level.

However, both tools use project location and consequently calculate the cumulative health risk for receptors within areas under the jurisdiction of SMAQMD, Yolo-Solano AQMD, Placer County APCD, El Dorado County AQMD, and Feather River AQMD. Therefore, the screening tools could not be used to evaluate health effects of criteria pollutant emissions associated with the proposed project within the MCAB. To achieve the health-based standards established by the USEPA, air districts prepare air quality management plans that detail regional programs to attain the AAQS. If the proposed project exceeds the regional significance thresholds, it could contribute to an increase in health effects in the basin until such time the attainment standards are met in the MCAB.

ODOR IMPACTS

Since the AAD does not provide guidance for analysis of odor impacts, guidelines from SMAQMD are used for this analysis. SMAQMD has developed screening-level distances to potential major odor sources (e.g., wastewater treatment facilities, food processing facilities, landfills) (SMAQMD 2009). Other minor sources of odors (e.g., exhaust from mobile sources, garbage collection areas, and charbroilers associated with commercial uses) are not typically associated with numerous odor complaints, but are known to have some temporary, less concentrated odorous emissions.

CO HOTSPOT

AAD does not provide guidance for analysis of CO impacts; therefore, guidelines from SMAQMD are used for this analysis. SMAQMD have developed screening criteria to determine whether a proposed project would result in a CO hotspot. SMAQMD has established a two-tiered qualitative screening threshold to determine whether a project would have the potential to exceed the ambient air quality standard for CO (Amador County 2016).

The project would result in a less-than-significant impact on air quality for local CO if the following conditions are met:

First tier:

- Traffic generated by the proposed project would not result in deterioration of intersection level of service (LOS) to LOS E or F; or
- The proposed project would not contribute additional traffic to an intersection that already operates at LOS E or F.

If the first tier of screening criteria is not met, SMAQMD provides a second tier of screening criteria:

- The proposed project would not result in an affected intersection experiencing more than 31,600 vehicles per hour.
- The project would not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, below-grade roadway, or other locations where horizontal or vertical mixing of air would be substantially limited.
- The mix of vehicle types at the intersection is not anticipated to be substantially different from the County average.

If the project does not meet the above screening criteria discussed in SMAQMD's *CEQA Guide*, Section 4.3.2, then SMAQMD recommends using the On-Road Mobile-Source Emission Factors (EMFAC) and the California Line Source Dispersion Model (CALINE4) in accordance with the

methodology recommended in the University California Davis Transportation Project-Level Carbon Monoxide Protocol (UC Davis CO Protocol).

NATURALLY OCCURRING ASBESTOS

Naturally occurring asbestos (NOA), which was identified as a TAC in 1986 by CARB, can become potentially airborne when disturbed by grading or blasting. Without appropriate controls, sensitive receptors near construction sites could be exposed to localized high levels of re-entrained fugitive PM₁₀ dust, potentially including NOA. Applicable projects would be required to develop an Asbestos Dust Control Plan as required in Section 93105 of the California Health and Safety Code, including measures to reduce exposure consistent with Section 93105(d) and (e) of the California Health and Safety Code.

1.2 GREENHOUSE GAS EMISSIONS

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. Climate change is the variation of Earth's climate over time, whether due to natural variability or as a result of human activities. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor,⁴ carbon (CO₂), methane (CH₄), and ozone (O₃)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).⁵ The major GHG are briefly described below.

- **Carbon dioxide (CO₂)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g. manufacture of cement). Carbon dioxide is removed from the

⁴ Water vapor (H₂O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, but part of the feedback loop rather than a primary cause of change.

⁵ Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (CARB 2017). However, state and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

- **Methane (CH₄)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.
- **Nitrous oxide (N₂O)** is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.
- **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high global-warming-potential (GWP) gases.
 - **Chlorofluorocarbons (CFCs)** are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are also ozone-depleting gases and are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.
 - **Perfluorocarbons (PFCs)** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF₄] and perfluoroethane [C₂F₆]) were introduced as alternatives, along with HFCs, to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high global warming potential.
 - **Sulfur Hexafluoride (SF₆)** is a colorless gas soluble in alcohol and ether, slightly soluble in water. SF₆ is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.
 - **Hydrochlorofluorocarbons (HCFCs)** contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.
 - **Hydrofluorocarbons (HFCs)** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs (IPCC 2001; USEPA 2025c).

GHGs are dependent on the lifetime or persistence of the gas molecule in the atmosphere. Some GHGs have stronger greenhouse effects than others. These are referred to as high GWP

gases. The GWP of GHG emissions are shown in Table 9, *GHG Emissions and Their Relative Global Warming Potential Compared to CO₂*. The GWP is used to convert GHGs to CO₂-equivalence (CO₂e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Fifth Assessment Report (AR5) GWP values for CH₄, a project that generates 10 MT of CH₄ would be equivalent to 280 MT of CO₂.⁶

Table 9 GHG Emissions and Their Relative Global Warming Potential

GHGs	Fourth Assessment Report (AR4) Global Warming Potential Relative to CO₂¹	Fifth Assessment Report (AR5) Global Warming Potential Relative to CO₂¹	Sixth Assessment Report (AR6) Global Warming Potential Relative to CO₂¹
Carbon Dioxide (CO ₂)	1	1	1
Methane ² (CH ₄)	25	28	30
Nitrous Oxide (N ₂ O)	298	265	273

Source: IPCC 2007, 2013, and 2023.

Notes: The IPCC published updated GWP values in its Sixth Assessment Report (AR6) that reflect latest information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO₂. However, GWP values identified in AR5 are used by the 2022 Scoping Plan for long-term emissions forecasting.

1 Based on 100-year time horizon of the GWP of the air pollutant compared to CO₂.

2 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO₂ is not included.

1.2.1 GHG Regulatory Setting

REGULATION OF GHG EMISSIONS ON A NATIONAL LEVEL

The US Environmental Protection Agency (USEPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The USEPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings do not in and of themselves impose any emission reduction requirements but allow the USEPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (USEPA 2009).

To regulate GHGs from passenger vehicles, USEPA was required to issue an endangerment finding (USEPA 2025d). The finding identifies emissions of six key GHGs—CO₂, CH₄, N₂O, hydrofluorocarbons, perfluorocarbons, and SF₆—that have been the subject of scrutiny and

⁶ The global warming potential of a GHG is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the project's GHG emissions inventory because they constitute the majority of GHG emissions and, per SMAQMD guidance, are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory. However, in response to President Trump's "Unleashing American Energy" EO, published on January 20, 2025, the USEPA announced its intention to reconsider regulations and actions that rely on the Endangerment Finding on March 12, 2025 (Holland & Knight 2025a).

The March 12 announcement specifically targets the following which impact GHG emissions:

- Advanced Clean Trucks (ACT) Plan
- Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards
- Multi-Pollutant Emissions Standards for MY 2027 and Later Light- and Medium-Duty Vehicles
- Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles – Phase 3.
- Corporate Average Fuel Economy (CAFE) Standards

US Mandatory Report Rule for GHGs (2009)

In response to the endangerment finding, the USEPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 MT or more of CO₂ per year are required to submit an annual report. However, under the proposed rule, the USEPA would rescind reporting requirements for a substantial portion of the Greenhouse Gas Reporting Program (GHGRP) (covering most source categories) and would suspend reporting obligations for the remaining sectors (those under Subpart W of the GHGRP) until reporting year 2034 (Holland & Knight 2025b).

Federal Fuel Economy and Fuel Standards

Update to Corporate Average Fuel Economy Standards

The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. On March 30, 2020, the USEPA finalized an updated CAFE and GHG emissions standards for passenger cars and light trucks and established new standards covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021 to 2026.

On June 7, 2024, NHTSA announced final CAFE standards for passenger cars and light trucks built in model years 2027-2031 and final fuel efficiency standards for heavy-duty pickup trucks and vans built in model years 2030-2035. The final rules establish standards that would require an industry fleet-wide average of approximately 50.4 mpg for passenger cars and light trucks in

model year 2031, by increasing fuel economy by 2 percent year over year for passenger cars (model years 2027-2031) and for light trucks (model years 2029-2031). For heavy-duty pickup trucks and vans, the final rule would increase fuel efficiency at a rate of 10 percent per year (model years 2030-2032) and 8 percent per year (model years 2033-2035) (NHTSA 2024).

Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles

In 2024, the USEPA issued a final rule, “Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles,” that sets new, more protective standards to reduce harmful air pollutant emissions from light-duty and medium-duty vehicles starting with MY 2027 (USEPA 2025e).

2025 Rollback of CAFE and Federal Fuel Standards

While both the new CAFE standards and fuel standard are currently in effect, the Trump Administration, directed the Department of Transportation to rescind and replace all existing CAFE standards and emissions standards on January 29, 2025. This action targeted regulations covering MY 2024 through 2035 for both light-duty and heavy-duty vehicles.

On June 6, 2025, the NHTSA published an interpretive rule that establishes the NHTSA’s authority to revise the CAFE standards without consideration of electric vehicles (EVs). California currently has no authority to implement these standards.

On June 11, 2025, the NHTSA published the final rule, “Resetting the Corporate Average Fuel Economy Program.” This rule does not immediately change current fuel economy standards; however, the rule clarifies the NHTSA’s interpretation of its obligations for CAFE standards stemming from the Energy Policy and Conservation Act of 1975 and the Energy Independence and Security Act of 2007. The rule asserts that some regulations, such as those established under previous presidential administrations, improperly considered electric vehicles (EVs) when identifying the “maximum feasibility” average fuel economy level upon which CAFE standards are developed, thereby establishing a legal foundation for future rollbacks of CAFE standards (NHTSA 2025).

USEPA Regulation of Stationary Sources under the Clean Air Act (Ongoing)

Pursuant to its authority under the Clean Air Act, the USEPA has developed regulations for new, large, stationary sources of emissions, such as power plants and refineries. Under former President Obama’s 2013 Climate Action Plan, the USEPA was directed to develop regulations for existing stationary sources as well. On June 19, 2019, the USEPA issued the final Affordable Clean Energy (ACE) rule, which became effective on August 19, 2019. The ACE rule was crafted under the direction of President Trump’s Energy Independence EO. It officially rescinded the Clean Power Plan rule issued during the Obama Administration and set emissions guidelines for

states in developing plans to limit CO₂ emissions from coal-fired power plants. The Affordable Clean Energy rule was vacated by the United States Court of Appeals for the District of Columbia Circuit on January 19, 2021. The Biden Administration is assessing options on potential future regulations.

REGULATION OF GHG EMISSIONS ON A STATE LEVEL

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in EO S-03-05 and EO B-30-15, EO B-55-18, Assembly Bill 32 (AB 32), Senate Bill 32 (SB 32), and SB 375.

Executive Order S-3-05

Executive Order S-3-05, signed June 1, 2005. Executive Order S-3-05 set the following GHG reduction targets for the State:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

Assembly Bill 32, the Global Warming Solutions Act (2006)

AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in EO S-03-05. CARB prepared the 2008 Scoping Plan to outline a plan to achieve the GHG emissions reduction targets of AB 32.

Senate Bill 32 and Assembly Bill 197

In September 2016, Governor Brown signed SB 32 and AB 197 into law, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires the CARB to prioritize direction emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

Executive Order B-55-18

Executive Order B-55-18, signed September 10, 2018, set a goal “to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter.” Executive Order B-55-18 directs CARB to work with relevant state agencies to ensure that future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning that not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than

2045, the remaining emissions should be offset by equivalent net removals of CO₂e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Assembly Bill 1279

AB 1279, signed by Governor Newsom in September 2022, codified the carbon neutrality targets of EO B-55-18 for year 2045 and sets a new legislative target for year 2045 of 85 percent below 1990 levels for anthropogenic GHG emissions. SB 1279 also requires CARB to update the Scoping Plan to address these new targets.

2022 Climate Change Scoping Plan

CARB adopted the *2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) on December 15, 2022, which lays out a path to achieve carbon neutrality by 2045 or earlier and to reduce the State’s anthropogenic GHG emissions (CARB 2022). The Scoping Plan provides updates to the previously adopted 2017 Scoping Plan and addresses the carbon neutrality goals of EO B-55-18 (discussed below) and the ambitious GHG reduction target as directed by AB 1279. Previous Scoping Plans focused on specific GHG reduction targets for our industrial, energy, and transportation sectors—to meet 1990 levels by 2020, and then the more aggressive 40 percent below that for the 2030 target. The 2022 Scoping Plan updates the target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. Carbon neutrality takes it one step further by expanding actions to capture and store carbon including through natural and working lands and mechanical technologies, while drastically reducing anthropogenic sources of carbon pollution at the same time.

The path forward was informed by the recent Sixth Assessment Report (AR6) of the IPCC and the measures would achieve 85 percent below 1990 levels by 2045 in accordance AB 1279. CARB’s 2022 Scoping Plan identifies strategies as shown in Table 10, *Priority Strategies for Local Government Climate Action Plans*, that would be most impactful at the local level for ensuring substantial process towards the State’s carbon neutrality goals.

Table 10 **Priority Strategies for Local Government Climate Action Plans**

Priority Area	Priority Strategies
Transportation Electrification	Convert local government fleets to zero-emission vehicles (ZEV) and provide EV charging at public sites.
	Create a jurisdiction-specific ZEV ecosystem to support deployment of ZEVs statewide (such as building standards that exceed state building codes, permit streamlining, infrastructure siting, consumer education, preferential parking policies, and ZEV readiness plans).
VMT Reduction	Reduce or eliminate minimum parking standards.
	Implement Complete Streets policies and investments, consistent with general plan circulation element requirements.

Priority Area	Priority Strategies
	Increase access to public transit by increasing density of development near transit, improving transit service by increasing service frequency, creating bus priority lanes, reducing or eliminating fares, microtransit, etc.
	Increase public access to clean mobility options by planning for and investing in electric shuttles, bike share, car share, and walking
	Implement parking pricing or transportation demand management pricing strategies.
	Amend zoning or development codes to enable mixed-use, walkable, transit-oriented, and compact infill development (such as increasing allowable density of the neighborhood).
	Preserve natural and working lands by implementing land use policies that guide development toward infill areas and do not convert “greenfield” land to urban uses (e.g., green belts, strategic conservation easements)
Building Decarbonization	Adopt all-electric new construction reach codes for residential and commercial uses.
	Adopt policies and incentive programs to implement energy efficiency retrofits for existing buildings, such as weatherization, lighting upgrades, and replacing energy-intensive appliances and equipment with more efficient systems (such as Energy Star-rated equipment and equipment controllers).
	Adopt policies and incentive programs to electrify all appliances and equipment in existing buildings such as appliance rebates, existing building reach codes, or time of sale electrification ordinances.
	Facilitate deployment of renewable energy production and distribution and energy storage on privately owned land uses (e.g., permit streamlining, information sharing).
	Deploy renewable energy production and energy storage directly in new public projects and on existing public facilities (e.g., solar photovoltaic systems on rooftops of municipal buildings and on canopies in public parking lots, battery storage systems in municipal buildings).
Building Decarbonization (cont.)	

Source: CARB 2022.

Based on Appendix D of the 2022 CARB Climate Change Scoping Plan, for residential and mixed-use development projects, CARB recommends first demonstrating that these land use development projects are aligned with State climate goals based on the attributes of land use development that reduce operational GHG emissions while simultaneously advancing fair housing. Attributes that accommodate growth in a manner consistent with the GHG and equity goals of SB 32 have all the following attributes:

- Transportation Electrification
 - Provide EV charging infrastructure that, at a minimum, meets the most ambitious voluntary standards in the California Green Building Standards Code at the time of project approval.

AQ/GHG APPENDIX

■ **VTMT Reduction**

- Is located on infill sites that are surrounded by existing urban uses and reuses or redevelops previously undeveloped or underutilized land that is presently served by existing utilities and essential public services (e.g., transit, streets, water, sewer).
- Does not result in the loss or conversion of the State's natural and working lands;
- Consists of transit-supportive densities (minimum of 20 residential dwelling units/acre), or is in proximity to existing transit stops (within a half mile), or satisfies more detailed and stringent criteria specified in the region's Sustainable Communities Strategy (SCS);
- Reduces parking requirements by:
 - Eliminating parking requirements or including maximum allowable parking ratios (i.e., the ratio of parking spaces to residential units or square feet); or
 - Providing residential parking supply at a ratio of <1 parking space per dwelling unit; or
 - For multifamily residential development, requiring parking costs to be unbundled from costs to rent or own a residential unit.
- At least 20 percent of the units are affordable to lower-income residents;
- Result in no net loss of existing affordable units.

■ **Building Decarbonization**

- Use all electric appliances without any natural gas connections and does not use propane or other fossil fuels for space heating, water heating, or indoor cooking (CARB 2022).

If the first approach to demonstrating consistency is not applicable (such as in the case of this school modernization project), the second approach to project-level alignment with state climate goals is to achieve net zero GHG emissions. The third approach to demonstrating project-level alignment with state climate goals is to align with GHG thresholds of significance, which many local air quality management (AQMDs) and air pollution control districts (APCDs) have developed or adopted (CARB 2022).

Senate Bill 375

In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the

18 metropolitan planning organizations (MPO). The SCAG is the MPO for the Southern California region, which includes the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial.

Update to SB 375 Targets

Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. CARB is required to update the targets for the MPOs every eight years. In June 2017, CARB released updated targets and technical methodology, and then released another update in February 2018, which became effective in October 2018 (CARB 2018). All sustainable community's strategies (SCS) adopted after October 1, 2018, are subject to these new targets. The SB 375 targets are in units of percent per capita reduction in GHG emissions from automobiles and light trucks compared to 2005. This excludes reductions anticipated from implementation of state technology and fuels strategies and any potential future state strategies such as statewide road user pricing. The proposed targets call for greater per-capita GHG emission reductions from SB 375 than are currently in place, which for 2035 translates into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted SCSs. CARB staff began the target update process in 2024 with a public workshop and plans to conclude it in 2026 with Board approval of the new targets (CARB 2026e).

SCAG's Regional Transportation Plan / Sustainable Communities Strategy

SB 375 requires each MPO to prepare a sustainable communities strategy in its regional transportation plan (RTP/SCS). For the SCAG region, the 2024-2050 RTP/SCS, Connect SoCal, was adopted on April 4, 2024, and is an update to the 2020-2045 RTP/SCS. In general, the RTP/SCS outlines a development pattern for the region that, when integrated with the transportation network and other transportation measures and policies, would reduce VMT from automobiles and light duty trucks and thereby reduce GHG emissions from these sources.

Connect SoCal focuses on the continued efforts of the previous RTP/SCSs to integrate transportation and land use strategies in development of the SCAG region through the horizon year 2050 (SCAG 2024). Connect SoCal forecasts that the SCAG region will meet its GHG per capita reduction targets of 8 percent by 2020 and 19 percent by 2035. It also forecasts that implementation of the plan will reduce VMT per capita in year 2050 by 6.3 percent compared to baseline conditions for that year. Connect SoCal includes a "Core Vision" that centers on maintaining and better managing the transportation network for moving people and goods, while expanding mobility choices by locating housing, jobs, and transit closer together; and increasing investments in transit and complete streets (SCAG 2024).

Transportation Sector Specific Regulations

Advanced Clean Trucks

In March 2021, CARB approved the Advanced Clean Trucks (ACT) regulation to accelerate the transition to zero-emission Class 2b and Class 8 medium- and heavy-duty trucks through manufacturer sales requirements. The regulation has two components including a manufacturer sales requirement, and a reporting requirement:

- **ZE Truck Sales:** Manufacturers who certify Class 2b through 8 chassis or complete vehicles with combustion engines are required to sell ZE trucks as an increasing percentage of their annual California sales from 2024 to 2035. By 2035, ZE truck/chassis sales need to be 55 percent of Class 2b – 3 truck sales, 75 percent of Class 4 – 8 straight truck sales, and 40 percent of truck tractor sales.
- **Company and Fleet Reporting:** Large employers including retailers, manufacturers, brokers and others would be required to report information about shipments and shuttle services. Fleet owners, with 50 or more trucks, would be required to report about their existing fleet operations. This information would help identify future strategies to ensure that fleets purchase available ZE trucks and place them in service where suitable to meet their needs.

The ACT regulation was granted a separate waiver in 2023 by the Biden administration. On May 22, 2025, the U.S. Senate voted to revoke the waiver granted by the Biden administration for California's ACT rule through House Joint (H.J.) Resolution 87. On June 12, 2025, President Trump formally nullified California's ACT rule. California currently has no authority to implement ACT.

Advanced Clean Fleets

CARB adopted the Advanced Clean Fleets (ACF) regulation in April 2023, requiring the use of ZEVs for targeted fleets and that manufacturers only produce ZEV trucks starting in 2036. The ACF regulation was adopted to complement the recently adopted ACT regulation to help advance the introduction of ZE technology into California's trucks and bus fleets. By 2050, the ACF regulation is expected to introduce 1,690,000 ZEVs into the California fleet and result in \$26.5 billion in statewide health benefits from improved air quality. This regulation will help contribute to the goals set by EO N-79-20 (described further below) and will help achieve emission reductions outlined in the State Implementation Plan, SB 350, AB 32, SB 32, and AB 32. The regulation has four components including a manufacturer sales mandate, drayage fleets requirements, high priority and federal fleets phase-in, and State and local agency procurement requirements.

On January 13, 2025, CARB withdrew their requests for the federal CAA waiver from the US EPA needed to support the ACF regulation. In addition, on September 25, 2025, CARB repealed the ACF drayage truck requirements (13 CCR § 2014) and the high priority and federal fleet

requirements (13 CCR § 2015 through 2015.6). California currently has no authority to implement ACF.

Omnibus Regulation

CARB adopted the Heavy-Duty Low NO_x Omnibus Regulation rule in September 2021, and amended in December 2023, to reduce nitrogen oxide (NO_x) and particulate matter (PM) emissions from new medium- and heavy-duty engines and vehicles beginning in 2024 model year (MY). The lower NO_x standards for 2024 through 2026 MY engines represent a 75 percent reduction of the 2010 MY standard and the lower PM standards represents a 50 percent reduction compared to the 2010 MY standard. The regulation was amended in 2023 to provide engine manufacturers with additional flexibility, and to prevent product availability issues for the 2024 through 2026 MY period.

On May 22, 2025, the U.S. Senate voted to disapprove the USEPA's waiver authorizing California's Heavy-Duty Low NO_x regulation through House Joint (H.J.) Resolution 89. The resolution was signed into law on June 12, 2025, formally nullifying the USEPA waiver under the Congressional Review Act. As a result, California currently has no authority to implement or enforce the Heavy-Duty Low NO_x rule.

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the USEPA. In 2012, the USEPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 light-duty vehicles. (See also the discussion on the update to the Corporate Average Fuel Economy standards at the beginning of this Section 5.5.2 under "Federal.") In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and GHGs with requirements for greater numbers of ZE vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025 new automobiles will emit 34 percent less GHG emissions and 75 percent less smog-forming emissions.

Executive Order S-01-07

On January 18, 2007, the state set a new LCFS for transportation fuels sold in the state. Executive Order S-01-07 sets a declining standard for GHG emissions measured in CO₂e gram per unit of fuel energy sold in California. The LCFS required a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least

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10 percent by 2020. The standard applies to refiners, blenders, producers, and importers of transportation fuels, and uses market-based mechanisms to allow these providers to choose how they reduce emissions during the “fuel cycle” using the most economically feasible methods.

Executive Order B-16-2012

On March 23, 2012, the state identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate ZE vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directed the number of ZE vehicles in California’s state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are ZE by 2015 and at least 25 percent by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions to 80 percent below 1990 levels.

Executive Order N-79-20

On September 23, 2020, Governor Newsom signed Executive Order N-79-20, whose goal is that 100 percent of in-state sales of new passenger cars and trucks will be ZE by 2035. Additionally, the fleet goals for trucks are that 100 percent of drayage trucks are ZE by 2035, and 100 percent of medium- and heavy-duty vehicles in the state are ZE by 2045, where feasible. The Executive Order’s goal for the State is to transition to 100 percent ZE off-road vehicles and equipment by 2035, where feasible.

Renewables Portfolio: Carbon Neutrality Regulations

Senate Bills 1078, 107, and X1-2 and Executive Order S-14-08

A major component of California’s Renewable Energy Program is the renewables portfolio standard established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08, signed in November 2008, expanded the state’s renewable energy standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350

Senate Bill 350 (de Leon) was signed into law September 2015 and establishes tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100. Under SB 100, the RPS for public-owned facilities and retail sellers consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. SB 100 also established a new RPS requirement of 50 percent by 2026. Furthermore, the bill establishes an overall state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Senate Bill 1020

SB 1020 was signed into law on September 16, 2022. It requires renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent by 2040. Additionally, SB 1020 requires all State agencies to procure 100 percent of electricity from renewable energy and zero-carbon resources by 2035.

Energy Efficiency Regulations

California Building Energy Code: Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2024 (California Code of Regulations [CCR] Title 24, Part 6). Title 24 Part 6 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods.

In 2024, the CEC adopted the 2025 Building Energy Efficiency Standards, which were subsequently approved by the California Building Standards Commission. The 2025 standards become effective and replace the existing 2022 standards on January 1, 2026. The 2025 standards would require mixed-fuel single-family homes to be electric-ready to accommodate replacement of gas appliances with electric appliances. In addition, the new standards also include prescriptive photovoltaic system and battery requirements for high-rise, multifamily

buildings (i.e., more than three stories) and noncommercial buildings such as hotels, offices, medical offices, restaurants, retail stores, schools, warehouses, theaters, and convention centers.⁷ The Building Energy and Efficiency Standards and CALGreen undergo a triennial update with a goal to achieve zero net energy for new buildings by 2030.

California Building Code: Green Building Standards (CALGreen)

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.⁸ The mandatory provisions of CALGreen became effective January 1, 2011, and were most recently updated in 2024 (2025 CALGreen update). The 2025 CALGreen update becomes effective on January 1, 2026, and provides updates to the residential and non-residential voluntary measures.

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (20 CCR §§ 1601–1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as “business as usual,” they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

Solid Waste Diversion Regulations

AB 939: Integrated Waste Management Act of 1989

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code §§ 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

⁷ California Energy Commission, 2021, Amendments to the Building Energy Efficiency Standards (2022 Energy Code) Draft Environmental Report. CEC-400-2021-077-D.

⁸ The green building standards became mandatory in the 2010 edition of the code.

AB 341

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses. Section 5.408 of CALGreen also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

AB 1327

The California Solid Waste Reuse and Recycling Access Act (AB 1327, Public Resources Code §§ 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

AB 1826

In October of 2014, Governor Brown signed AB 1826 requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses and multifamily residential dwellings with five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed with food waste.

Water Efficiency Regulations

SBX7-7

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed “SBX7-7.” SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 required urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

AB 1881: Water Conservation in Landscaping Act

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or an equivalent. AB 1881 also requires the CEC to consult with the DWR to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

Short-Lived Climate Pollutant Reduction Strategy

Senate Bill 1383

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH₄. Black carbon is the light-absorbing component of fine particulate matter produced during the incomplete combustion of fuels. SB 1383 required the state board, no later than January 1, 2018, to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The bill also established targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the Short-Lived Climate Pollutant Reduction Strategy, which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use (CARB 2017). In-use on-road rules were expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020.

CALIFORNIA'S GREENHOUSE GAS SOURCES AND RELATIVE CONTRIBUTION

In 2025, the statewide GHG emissions inventory was updated for 2000 to 2023 emissions using the GWPs in IPCC's AR4 and reported that California produced 360.4 MMTCO₂e GHG emissions in 2023 (3.0 percent lower than 2022 levels). Since peak levels in 2004, California's GHG emissions have generally followed a decreasing trend. By 2014, statewide GHG emissions dropped below the 2020 GHG Limit (AB 32 target for year 2020) and have remained below the Limit since that time. Additionally, the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross state product (GSP)) is declining (CARB 2025).

California's transportation sector remains the largest source of GHG emissions, producing 37.1 percent of the state's total emissions. Industrial sector emissions made up 18.6 percent, and electric power generation made up 15.9 percent of the state's emissions inventory. Other major

sectors of GHG emissions include residential and commercial (12.0 percent), agriculture and forestry (8.1 percent), high GWP (5.9 percent), and recycling and waste (2.4 percent).

Emissions from transportation sector have generally decreased since their peak in 2002, but this sector has experienced periods of growth and decline. The decrease in 2023 was primarily due to reductions from on-road sources and decrease in the amount of fuel used. Electricity emissions also have decreased since the early 2000s due to the deployment of renewable and less carbon-intensive resources, leading to reduced dependence on fossil fuel electricity generation. Emissions from the industrial sector decreased from 2022, largely due to the continued downward trend in oil and gas production (CARB 2025).

1.2.2 Thresholds of Significance

The CEQA Guidelines recommend that a lead agency consider the following when assessing the significance of impacts from GHG emissions on the environment:

1. The extent to which the 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;
3. The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions.⁹

SMAQMD GHG THRESHOLDS OF SIGNIFANCE

SMAQMD has created a tiered approach in evaluating operation-related GHG emissions impacts (SMAQMD 2021). Per SMAQMD's CEQA Guide a project may be evaluated for consistency with a qualified GHG Reduction Strategy. If a project is determined to be consistent with the qualified GHG Reduction Strategy, it is considered to result in a less than significant GHG emissions impact. However, if a project is not consistent with an applicable qualified GHG Reduction Strategy, or there is no applicable qualified GHG Reduction Strategy, a project may be evaluated against the GHG operational screening levels.

The screening levels represent the size of development that would not generate operational emissions exceeding 1,100 MTCO₂e/yr. If a project does not exceed the screening levels or

⁹ The Governor's Office of Planning and Research recommendations include a requirement that such a plan must be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

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generates emissions less than or equal to 1,100 MTCO₂e/yr and implements the Tier 1 GHG Best Management Practices (BMP), it is determined to result in a less than significant GHG emissions impact. The Tier 1 BMPs prohibit use of natural gas and require a project to be designed and constructed without natural gas infrastructure (BMP 1) and require a project to meet the current CALGreen Tier 2 EV ready standards (BMP 2). If a project exceeds 1,100 MTCO₂e/yr with the Tier 1 BMPs, it would be required to incorporate the Tier 2 BMPs, which consists of BMP 3. A project would meet BMP 3 requirements if it were to reduce its VMT by 15 percent for residential and/or worker compared to the existing average VMT per capita in the county. Additionally, if applicable, the retail component of a project must achieve a no net increase in GHG production.

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Amador High School-> Amador High School															
High School (525)		Daily Trips		AM Peak Hour						PM Peak Hour					
	Number of Students	Rate	Trips	Rate	%In	% Out	Trips	In	Out	Rate	%In	% Out	Trips	In	Out
Existing Enrollment	573	1.94	1112	0.53	68%	32%	304	207	97	0.31	33%	67%	178	59	119
Proposed Enrollment	821	1.94	1593	0.53	68%	32%	435	296	139	0.31	33%	67%	255	84	171
Change in Trips							131	89	42				77	25	52

Argonaut High School -> Argonaut Junior High School															
Junior High School (522)		Daily Trips		AM Peak Hour						PM Peak Hour					
	Number of Students	Rate	Trips	Rate	%In	% Out	Trips	In	Out	Rate	%In	% Out	Trips	In	Out
Existing Enrollment	535	1.94	1038	0.53	68%	32%	284	193	91	0.31	33%	67%	166	55	111
Proposed Enrollment	857	2.09	1791	0.75	55%	45%	643	354	289	0.34	46%	54%	291	134	157
Change in Trips							359	161	199				126	79	46

Ione Jr. High School -> Ione Elementary School															
Elementary School (520)		Daily Trips		AM Peak Hour						PM Peak Hour					
	Number of Students	Rate	Trips	Rate	%In	% Out	Trips	In	Out	Rate	%In	% Out	Trips	In	Out
Existing Enrollment	396	2.09	828	0.75	55%	45%	297	163	134	0.34	46%	54%	135	62	73
Proposed Enrollment	658	2.27	1494	0.74	54%	46%	487	263	224	0.44	46%	54%	290	133	156
Change in Trips							190	100	90				155	71	84

Independence High School															
High School (525)		Daily Trips		AM Peak Hour						PM Peak Hour					
	Number of Students	Rate	Trips	Rate	%In	% Out	Trips	In	Out	Rate	%In	% Out	Trips	In	Out
Existing Enrollment	127	1.94	246	0.53	68%	32%	67	46	22	0.31	33%	67%	39	13	26
Proposed Enrollment	75	1.94	146	0.53	68%	32%	40	27	13	0.31	33%	67%	23	8	16
Change in Trips							-28	-19	-9				-16	-5	-11

Jackson Junior High															
Junior High School (522)		Daily Trips		AM Peak Hour						PM Peak Hour					
	Number of Students	Rate	Trips	Rate	%In	% Out	Trips	In	Out	Rate	%In	% Out	Trips	In	Out
Existing Enrollment	275	2.09	575	0.75	55%	45%	206	113	93	0.34	46%	54%	94	43	50
Proposed Enrollment	52	2.09	109	0.75	55%	45%	39	21	18	0.34	46%	54%	18	8	10
Change in Trips							-167	-92	-75				-76	-35	-41