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## **5. AIR QUALITY, GREENHOUSE GAS EMISSIONS, AND ENERGY**

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## 5. AIR QUALITY, GREENHOUSE GAS EMISSIONS, AND ENERGY

### 5.1 INTRODUCTION

The Air Quality, Greenhouse Gas Emissions, and Energy chapter of the EIR describes the potential impacts of the proposed project on local and regional air quality emissions, potential impacts related to greenhouse gas emissions (GHGs) and climate change, and potential impacts related to energy. The chapter includes a discussion of the existing air quality, GHG, and energy setting, construction-related air quality impacts resulting from grading and equipment emissions, direct and indirect emissions associated with the project, the impacts of these emissions on both the local and regional scale, impacts associated with energy use, and mitigation measures warranted to reduce or eliminate any identified significant impacts. This chapter is based on the Placer County General Plan<sup>1</sup> and associated EIR, the Placer County Air Pollution Control District's (PCAPCD) *CEQA Air Quality Handbook*,<sup>2</sup> PCAPCD's *Review of Land Use Projects Under CEQA*,<sup>3</sup> the *Placer County Sustainability Plan: A Greenhouse Gas Emission Reduction Plan and Adaptation Strategy*,<sup>4</sup> and the technical analysis performed by Raney Planning and Management, Inc.

### 5.2 EXISTING ENVIRONMENTAL SETTING

The following information provides an overview of the existing environmental setting in relation to air quality within the proposed project area. Air basin characteristics, ambient air quality standards (AAQS), attainment status and regional air quality plans, local air quality monitoring, odors, and sensitive receptors are discussed. In addition to the information pertaining to air quality, information related to climate change, GHGs, and energy is provided as well.

#### **Air Basin Characteristics**

The proposed project site is located in western Placer County, which falls within the Sacramento Valley Air Basin (SVAB) and is within the jurisdictional boundaries of the PCAPCD. Air flows into the SVAB through the Carquinez Strait, moves across the Delta and carries pollutants from the heavily populated San Francisco Bay Area into the SVAB. The climate is characterized by hot, dry summers and cool, rainy winters. Characteristic of SVAB winter weather are periods of dense and persistent low-level fog, which are most prevalent between storms. From May to October, the region's intense heat and sunlight lead to high ozone concentrations. Prevailing winds are from the south and southwest, and as a result of prevailing winds coming generally from south to southwest, air quality in the area is heavily influenced by mobile and stationary sources of air pollution located upwind in the Sacramento Metropolitan Area.

Most precipitation in the SVAB results from air masses moving in from the Pacific Ocean during the winter months. Storms usually move through the area from the west or northwest. During the winter rainy season (November through February) over half the total annual precipitation falls

<sup>1</sup> Placer County. *Countywide General Plan Policy Document*. August 1994 (Updated May 21, 2013).

<sup>2</sup> Placer County Air Pollution Control District. *CEQA Air Quality Handbook*. November 21, 2017.

<sup>3</sup> Placer County Air Pollution Control District. *Review of Land Use Projects Under CEQA*. October 13, 2016.

<sup>4</sup> Placer County Community Development Resource Agency. *Placer County Sustainability Plan: A Greenhouse Gas Emission Reduction Plan and Adaptation Strategy*. January 28, 2020.



while the average winter temperature is a moderate 49 degrees Fahrenheit. During the summer, daytime temperatures can exceed 100 degrees Fahrenheit. Dense fog occurs mostly in mid-winter and rarely in the summer. Daytime temperatures from April through October average between 60- and 80-degrees Fahrenheit with low humidity. The inland location and surrounding mountains shelter the valley from much of the ocean breeze that keeps the coastal regions moderate in temperature. The only breach in the mountain barrier is the Carquinez Strait, which exposes the midsection of the valley to the coastal air mass.

Air quality in Placer County is also affected by inversion layers, which occur when a layer of warm air traps a layer of cold air, preventing vertical dispersion of air contaminants. The presence of an inversion layer results in higher concentrations of pollutants near ground level. Summer inversions are strong and frequent, but are less troublesome than those that occur in the fall. Autumn inversions, formed by warm air subsiding in a region of high pressure, have accompanying light winds that do not provide adequate dispersion of air pollutants.

Air quality in the project vicinity is influenced by both local and distant emission sources. Air pollutant sources in the immediate project vicinity include emissions from vehicle traffic on nearby roadways, as well as from trains along the Union Pacific Railroad (UPRR) tracks south of the project site. Other sources of air pollutants in the area include activities associated with commercial, residential, and industrial land uses.

### **Ambient Air Quality Standards**

Both the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established AAQS for common pollutants. The federal standards are divided into primary standards, which are designed to protect the public health, and secondary standards, which are designed to protect the public welfare. The AAQS for each contaminant represent safe levels that avoid specific adverse health effects. Pollutants for which AAQS have been established are called “criteria” pollutants. Table 5-1 identifies the major pollutants, characteristics, health effects and typical sources. The national and California AAQS (NAAQS and CAAQS, respectively) are summarized in Table 5-2. The NAAQS and CAAQS were developed independently with differing purposes and methods. As a result, the federal and State standards differ in some cases. In general, the State of California standards are more stringent than the federal standards, particularly for ozone and particulate matter (PM).

A description of each criteria pollutant and its potential health effects is provided in the following section.

### **Ozone**

Ozone is a reactive gas consisting of three oxygen atoms. In the troposphere, ozone is a product of the photochemical process involving the sun's energy, and is a secondary pollutant formed as a result of a complex chemical reaction between reactive organic gases (ROG) and oxides of nitrogen (NO<sub>x</sub>) emissions in the presence of sunlight. As such, unlike other pollutants, ozone is not released directly into the atmosphere from any sources. In the stratosphere, ozone exists naturally and shields Earth from harmful incoming ultraviolet radiation. The primary source of ozone precursors is mobile sources, including cars, trucks, buses, construction equipment, and agricultural equipment. Ground-level ozone reaches the highest level during the afternoon and early evening hours. High levels occur most often during the summer months. Ground-level ozone is a strong irritant that could cause constriction of the airways, forcing the respiratory system to work harder in order to provide oxygen. Ozone at the Earth's surface causes numerous adverse



health effects and is a major component of smog. High concentrations of ground level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments.

**Table 5-1  
Summary of Criteria Pollutants**

<b>Pollutant</b>	<b>Characteristics</b>	<b>Health Effects</b>	<b>Major Sources</b>
Ozone	A highly reactive gas produced by the photochemical process involving a chemical reaction between the sun's energy and other pollutant emissions. Often called photochemical smog.	<ul style="list-style-type: none"> <li>• Eye irritation</li> <li>• Wheezing, chest pain, dry throat, headache, or nausea</li> <li>• Aggravated respiratory disease such as emphysema, bronchitis, and asthma</li> </ul>	Combustion sources such as factories, automobiles, and evaporation of solvents and fuels.
Carbon Monoxide	An odorless, colorless, highly toxic gas that is formed by the incomplete combustion of fuels.	<ul style="list-style-type: none"> <li>• Impairment of oxygen transport in the bloodstream</li> <li>• Impaired vision, reduced alertness, chest pain, and headaches</li> <li>• Can be fatal in the case of very high concentrations</li> </ul>	Automobile exhaust, combustion of fuels, and combustion of wood in woodstoves and fireplaces.
Nitrogen Dioxide	A reddish-brown gas that discolors the air and is formed during combustion of fossil fuels under high temperature and pressure.	<ul style="list-style-type: none"> <li>• Lung irritation and damage</li> <li>• Increased risk of acute and chronic respiratory disease</li> </ul>	Automobile and diesel truck exhaust, industrial processes, and fossil-fueled power plants.
Sulfur Dioxide	A colorless, irritating gas with a rotten egg odor formed by combustion of sulfur-containing fossil fuels.	<ul style="list-style-type: none"> <li>• Aggravation of chronic obstruction lung disease</li> <li>• Increased risk of acute and chronic respiratory disease</li> </ul>	Diesel vehicle exhaust, oil-powered power plants, and industrial processes.
Particulate Matter (PM <sub>10</sub> and PM <sub>2.5</sub> )	A complex mixture of extremely small particles and liquid droplets that can easily pass through the throat and nose and enter the lungs.	<ul style="list-style-type: none"> <li>• Aggravation of chronic respiratory disease</li> <li>• Heart and lung disease</li> <li>• Coughing</li> <li>• Bronchitis</li> <li>• Chronic respiratory disease in children</li> <li>• Irregular heartbeat</li> <li>• Nonfatal heart attacks</li> </ul>	Combustion sources such as automobiles, power generation, industrial processes, and wood burning. Also from unpaved roads, farming activities, and fugitive windblown dust.
Lead	A metal found naturally in the environment as well as in manufactured products.	<ul style="list-style-type: none"> <li>• Loss of appetite, weakness, apathy, and miscarriage</li> <li>• Lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract</li> </ul>	Industrial sources and combustion of leaded aviation gasoline.
<b>Sources:</b>			
<ul style="list-style-type: none"> <li>• California Air Resources Board. <i>California Ambient Air Quality Standards (CAAQS)</i>. Available at: <a href="https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards">https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards</a>. Accessed January 2021.</li> <li>• Sacramento Metropolitan, El Dorado, Feather River, Placer, and Yolo-Solano Air Districts, <i>Spare the Air website. Air Quality Information for the Sacramento Region</i>. Available at: <a href="http://sparetheair.com">sparetheair.com</a>. Accessed January 2021.</li> <li>• California Air Resources Board. <i>Glossary of Air Pollution Terms</i>. Available at: <a href="https://ww2.arb.ca.gov/glossary">https://ww2.arb.ca.gov/glossary</a>. Accessed January 2021.</li> </ul>			



**Table 5-2  
Ambient Air Quality Standards**

Pollutant	Averaging Time	CAAQS	NAAQS	
			Primary	Secondary
Ozone	1 Hour	0.09 ppm	-	Same as primary
	8 Hour	0.070 ppm	0.070 ppm	
Carbon Monoxide	8 Hour	9 ppm	9 ppm	-
	1 Hour	20 ppm	35 ppm	
Nitrogen Dioxide	Annual Mean	0.030 ppm	53 ppb	Same as primary
	1 Hour	0.18 ppm	100 ppb	-
Sulfur Dioxide	24 Hour	0.04 ppm	-	-
	3 Hour	-	-	0.5 ppm
	1 Hour	0.25 ppm	75 ppb	-
Respirable Particulate Matter (PM <sub>10</sub> )	Annual Mean	20 ug/m <sup>3</sup>	-	Same as primary
	24 Hour	50 ug/m <sup>3</sup>	150 ug/m <sup>3</sup>	
Fine Particulate Matter (PM <sub>2.5</sub> )	Annual Mean	12 ug/m <sup>3</sup>	12 ug/m <sup>3</sup>	15 ug/m <sup>3</sup>
	24 Hour	-	35 ug/m <sup>3</sup>	Same as primary
Lead	30 Day Average	1.5 ug/m <sup>3</sup>	-	-
	Calendar Quarter	-	1.5 ug/m <sup>3</sup>	Same as primary
Sulfates	24 Hour	25 ug/m <sup>3</sup>	-	-
Hydrogen Sulfide	1 Hour	0.03 ppm	-	-
Vinyl Chloride	24 Hour	0.010 ppm	-	-
Visibility Reducing Particles	8 Hour	see note below	-	-

ppm = parts per million  
ppb = parts per billion  
ug/m<sup>3</sup> = micrograms per cubic meter

Note: Statewide Visibility Reducing Particle Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

Source: California Air Resources Board. Ambient Air Quality Standards. May 4, 2016. Available at: <https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf>. Accessed January 2021.

### Reactive Organic Gas

ROG is a reactive chemical gas composed of hydrocarbon compounds typically found in paints and solvents that contributes to the formation of smog and ozone by involvement in atmospheric chemical reactions. A separate health standard does not exist for ROG. However, some compounds that make up ROG are toxic, such as the carcinogen benzene.

### Oxides of Nitrogen

NO<sub>x</sub> are a family of gaseous nitrogen compounds and are precursors to the formation of ozone and particulate matter. The major component of NO<sub>x</sub>, nitrogen dioxide (NO<sub>2</sub>), is a reddish-brown gas that discolors the air and is toxic at high concentrations. NO<sub>x</sub> results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of NO<sub>x</sub>. NO<sub>x</sub> reacts with ROG to form smog, which could result in adverse impacts to human health, damage the environment, and cause poor visibility. Additionally, NO<sub>x</sub> emissions are a major component of acid rain. Health effects related



to NO<sub>x</sub> include lung irritation and lung damage and can cause increased risk of acute and chronic respiratory disease.

### **Carbon Monoxide**

Carbon monoxide (CO) is a colorless, odorless, poisonous gas produced by incomplete burning of carbon-based fuels such as gasoline, oil, and wood. When CO enters the body, the CO combines with chemicals in the body, which prevents blood from carrying oxygen to cells, tissues, and organs. Symptoms of exposure to CO can include problems with vision, reduced alertness, and general reduction in mental and physical functions. Exposure to CO can result in chest pain, headaches, reduced mental alertness, and death at high concentrations.

### **Sulfur Dioxide**

Sulfur dioxide (SO<sub>2</sub>) is a colorless, irritating gas with a rotten egg odor formed primarily by the combustion of sulfur-containing fossil fuels from mobile sources, such as locomotives, ships, and off-road diesel equipment. SO<sub>2</sub> is also emitted from several industrial processes, such as petroleum refining and metal processing. Similar to airborne NO<sub>x</sub>, suspended sulfur oxide particles contribute to poor visibility. The sulfur oxide particles are also a component of PM<sub>10</sub>.

### **Particulate Matter**

Particulate matter, also known as particle pollution or PM, is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to their potential for causing health impacts. The USEPA is concerned about particles that are 10 micrometers in diameter or smaller (PM<sub>10</sub>) because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, the particles could affect the heart and lungs and cause serious health effects. USEPA groups particle pollution into three categories based on their size and where they are deposited:

- "Inhalable coarse particles (PM<sub>2.5-10</sub>)," which are found near roadways and dusty industries, are between 2.5 and 10 micrometers in diameter. PM<sub>2.5-10</sub> is deposited in the thoracic region of the lungs.
- "Fine particles (PM<sub>2.5</sub>)," which are found in smoke and haze, are 2.5 micrometers in diameter and smaller. PM<sub>2.5</sub> particles could be directly emitted from sources such as forest fires, or could form when gases emitted from power plants, industries, and automobiles react in the air. They penetrate deeply into the thoracic and alveolar regions of the lungs.
- "Ultrafine particles (UFP)," are very, very small particles (less than 0.1 micrometers in diameter) largely resulting from the combustion of fossil fuels, meat, wood, and other hydrocarbons. While UFP mass is a small portion of PM<sub>2.5</sub>, their high surface area, deep lung penetration, and transfer into the bloodstream could result in disproportionate health impacts relative to their mass. UFP is not currently regulated separately, but is analyzed as part of PM<sub>2.5</sub>.

PM<sub>10</sub>, PM<sub>2.5</sub>, and UFP include primary pollutants, which are emitted directly to the atmosphere and secondary pollutants, which are formed in the atmosphere by chemical reactions among precursors. Generally speaking, PM<sub>2.5</sub> and UFP are emitted by combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM<sub>10</sub> sources include the same sources plus roads and farming activities. Fugitive windblown dust and other area sources also represent a source of airborne dust. Long-term PM pollution, especially fine particles, could result in significant health problems including, but not limited to, the following: increased respiratory



symptoms, such as irritation of the airways, coughing or difficulty breathing; decreased lung function; aggravated asthma; development of chronic respiratory disease in children; development of chronic bronchitis or obstructive lung disease; irregular heartbeat; heart attacks; and increased blood pressure.

### **Lead**

Lead is a relatively soft and chemically resistant metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, and, thus, essentially persists forever. Lead forms compounds with both organic and inorganic substances. As an air pollutant, lead is present in small particles. Sources of lead emissions in California include a variety of industrial activities. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out, with the result that ambient concentrations of lead have dropped dramatically. However, because lead was emitted in large amounts from vehicles when leaded gasoline was used, lead is present in many soils (especially urban soils) as a result of airborne dispersion and could become re-suspended into the air.

Because lead is only slowly excreted by the human body, exposures to small amounts of lead from a variety of sources could accumulate to harmful levels. Effects from inhalation of lead above the level of the ambient air quality standard may include impaired blood formation and nerve conduction. Lead can adversely affect the nervous, reproductive, digestive, immune, and blood-forming systems. Symptoms could include fatigue, anxiety, short-term memory loss, depression, weakness in the extremities, and learning disabilities in children. Lead also causes cancer.

### **Sulfates**

Sulfates are the fully oxidized ionic form of sulfur and are colorless gases. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. The sulfur is oxidized to SO<sub>2</sub> during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO<sub>2</sub> to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

The sulfates standard established by CARB is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardiopulmonary disease. Sulfates are particularly effective in degrading visibility, and, because they are usually acidic, can harm ecosystems and damage materials and property.

### **Hydrogen Sulfide**

Hydrogen sulfide (H<sub>2</sub>S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plants, and confined animal feeding operations. Hydrogen sulfide is extremely hazardous in high concentrations, especially in enclosed spaces (800 ppm can cause death).

### **Vinyl Chloride**

Vinyl chloride (C<sub>2</sub>H<sub>3</sub>Cl, also known as VCM) is a colorless gas that does not occur naturally, but is formed when other substances such as trichloroethane, trichloroethylene, and tetrachloroethylene are broken down. Vinyl chloride is used to make polyvinyl chloride (PVC) which is used



to make a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

### **Visibility Reducing Particles**

Visibility reducing particles are a mixture of suspended particulate matter consisting of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. The standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

### **Toxic Air Contaminants**

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are also a category of environmental concern. TACs are present in many types of emissions with varying degrees of toxicity. Public exposure to TACs can result from emissions from normal operations, as well as accidental releases. Common stationary sources of TACs include gasoline stations, dry cleaners, and diesel backup generators, which are subject to PCAPCD stationary source permit requirements. The other, often more significant, common source type is on-road motor vehicles, such as cars and trucks, on freeways and roads, and off-road sources such as construction equipment, ships, and trains.

Fossil fueled combustion engines, including those used in cars, trucks, and some pieces of construction equipment, release at least 40 different TACs. In terms of health risks, the most volatile contaminants are diesel particulate matter (DPM), benzene, formaldehyde, 1,3-butadiene, toluene, xylenes, and acetaldehyde. Gasoline vapors contain several TACs, including benzene, toluene, and xylenes. Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust, DPM, is composed of carbon particles and numerous organic compounds, including over 40 known cancer-causing organic substances. Examples of such chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. Diesel exhaust also contains gaseous pollutants, including volatile organic compounds and NO<sub>x</sub>. Due to the published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects, the CARB has identified DPM from diesel-fueled engines as a TAC. Although a variety of TACs are emitted by fossil fueled combustion engines, the cancer risk due to DPM exposure represents a more significant risk than the other TACs discussed above.<sup>5</sup>

More than 90 percent of DPM is less than one micrometer in diameter, and, thus, DPM is a subset of PM<sub>2.5</sub>. As a California statewide average, DPM comprises about eight percent of PM<sub>2.5</sub> in outdoor air, although DPM levels vary regionally due to the non-uniform distribution of sources throughout the State. Most major sources of diesel emissions, such as ships, trains, and trucks, operate in and around ports, rail yards, and heavily-traveled roadways. Such areas are often located near highly populated areas. Thus, elevated DPM levels are mainly an urban problem, with large numbers of people exposed to higher DPM concentrations, resulting in greater health consequences compared to rural areas.

Due to the high levels of diesel activity, high volume freeways, stationary diesel engines, rail yards and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Construction-related activities also have the potential

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<sup>5</sup> California Air Resources Board. *Reducing Toxic Air Pollutants in California's Communities*. February 6, 2002.



to generate concentrations of DPM from on-road haul trucks and off-road equipment exhaust emissions.

The size of diesel particulates that are of the greatest health concern are fine particles (i.e., PM<sub>2.5</sub>) and UFPs. UFPs have a small diameter (on the order of 0.1 micrometers).<sup>6</sup> The small diameter of UFPs imparts the particulates with unique attributes, such as high surface areas and the ability to penetrate deeply into lungs. Once UFPs have been deposited in lungs, the small diameter allows the UFPs to be transferred to the bloodstream. The high surface area of the UFPs also allows for a greater adsorption of other chemicals, which are transported along with the UFPs into the bloodstream of the inhaler, where the chemicals can eventually reach critical organs.<sup>7</sup> The penetration capability of UFPs may contribute to adverse health effects related to heart, lung, and other organ health.<sup>8</sup> UFPs are a subset of DPM and activities that create large amounts of DPM, such as the operations involving heavy diesel-powered engines, also release UFPs. Considering that UFPs are a subset of DPM, and DPM represents a subset of PM<sub>2.5</sub>, estimations of either concentrations or emissions of PM<sub>2.5</sub> or DPM include UFPs.

Health risks from TACs are a function of both the concentration of emissions and the duration of exposure, which typically are associated with long-term exposure and the associated risk of contracting cancer. Health effects of exposure to TACs other than cancer can include birth defects, neurological damage, and death. Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level. The identification, regulation, and monitoring of TACs is relatively new compared to criteria air pollutants that have established AAQS. TACs are regulated or evaluated on the basis of risk to human health rather than comparison to an AAQS or emission-based threshold.

### Naturally Occurring Asbestos

Another concern related to air quality is naturally occurring asbestos (NOA). Asbestos is a term used for several types of naturally-occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California. When rock containing asbestos is broken or crushed, asbestos fibers may be released and become airborne. Exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest and abdominal cavity), and asbestosis (a non-cancerous lung disease which causes scarring of the lungs). Because asbestos is a known carcinogen, NOA is considered a TAC. Sources of asbestos emissions include: unpaved roads or driveways surfaced with ultramafic rock; construction activities in ultramafic rock deposits; or rock quarrying activities where ultramafic rock is present.

NOA is typically associated with fault zones, and areas containing serpentinite or contacts between serpentinite and other types of rocks. According to the *Special Report 190: Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County, California* prepared by the Department of Conservation, the project site is located within an area categorized as least likely to contain NOA, because faults and serpentinite outcroppings are not known to be in the project area.<sup>9</sup>

<sup>6</sup> South Coast Air Quality Management District. *Final 2012 Air Quality Management Plan*. December 2012.

<sup>7</sup> Health Effects Institute. *Understanding the Health Effects of Ambient Ultrafine Particles*. January 2013.

<sup>8</sup> South Coast Air Quality Management District. *Final 2012 Air Quality Management Plan*. December 2012.

<sup>9</sup> California Department of Conservation, California Geological Survey. *Special Report 190: Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County, California*. Published 2006.



## **Attainment Status and Regional Air Quality Plans**

The Federal Clean Air Act (FCAA) and the California Clean Air Act (CCAA) require all areas of California to be classified as attainment, nonattainment, or unclassified as to their status with regard to the NAAQS and/or CAAQS. The FCAA and CCAA require that the CARB, based on air quality monitoring data, designate portions of the State where the federal or State AAQS are not met as “nonattainment areas.” Because of the differences between the national and State standards, the designation of nonattainment areas is different under the federal and State legislation. The CCAA requires local air pollution control districts to prepare air quality attainment plans. These plans must provide for district-wide emission reductions of five percent per year averaged over consecutive three-year periods or, provide for adoption of “all feasible measures on an expeditious schedule.”

As presented in Table 5-3, under the CCAA, Placer County has been designated nonattainment for the State one-hour ozone, State and federal eight-hour ozone and State PM<sub>10</sub> standards. The County is designated attainment or unclassified for all other AAQS. Due to the nonattainment designations, the PCAPCD, along with the other air districts in the SVAB region, is required to develop plans to attain the federal and State standards for ozone and particulate matter. The air quality plans include emissions inventories to measure the sources of air pollutants, to evaluate how well different control measures have worked, and show how air pollution would be reduced. In addition, the plans include the estimated future levels of pollution to ensure that the area would meet air quality goals. Each of the attainment plans currently in effect are discussed in further detail in the Regulatory Context section of this chapter.

## **Local Air Quality Monitoring**

Air quality is monitored by CARB at various locations to determine which air quality standards are being violated, and to direct emission reduction efforts, such as developing attainment plans and rules, incentive programs, etc. The nearest local air quality monitoring station to the project site is the Lincoln-2885 Moore Road station, which is located approximately 7.7 miles west of the project site. The Lincoln-2885 Moore Road station does not provide data for 24-hour PM<sub>10</sub> or 1-hour NO<sub>2</sub> concentrations; thus, the nearest station with such data was used, which was the Roseville-N Sunrise station, located at 151 North Sunrise Avenue. Based on the data available from the applicable monitoring station, Table 5-4 presents the number of days that the State and federal AAQS were exceeded for the three-year period from 2017 to 2019.

## **Odors**

While offensive odors rarely cause physical harm, they can be unpleasant, leading to considerable annoyance and distress among the public and can generate citizen complaints to local governments and air districts. Adverse effects of odors on residential areas and other sensitive receptors warrant the closest scrutiny; but consideration should also be given to other land use types where people congregate, such as recreational facilities, worksites, and commercial areas. The potential for an odor impact is dependent on a number of variables including the nature of the odor source, distance between a receptor and an odor source, and local meteorological conditions.

One of the most important factors influencing the potential for an odor impact to occur is the distance between the odor source and receptors, also referred to as a buffer zone or setback. The greater the distance between an odor source and receptor, the less concentrated the odor emission would be when reaching the receptor.



**Table 5-3  
Placer County Attainment Status Designations**

Pollutant	Averaging Time	California Standards	Federal Standards
Ozone	1 Hour	Nonattainment	Revoked in 2005
	8 Hour	Nonattainment	Nonattainment
Carbon Monoxide	8 Hour	Attainment	Attainment
	1 Hour	Attainment	Attainment
Nitrogen Dioxide	Annual Mean	Attainment	Attainment
	1 Hour	Attainment	Attainment
Sulfur Dioxide	Annual Mean	Attainment	-
	24 Hour	Attainment	-
	3 Hour	Attainment	-
	1 Hour	Attainment	-
Respirable Particulate Matter (PM <sub>10</sub> )	Annual Mean	Nonattainment	-
	24 Hour	Nonattainment	Attainment
Fine Particulate Matter (PM <sub>2.5</sub> )	Annual Mean	Attainment	Attainment
	24 Hour	-	Nonattainment
Lead	30 Day Average	Attainment	Attainment
	Calendar Quarter	Attainment	Attainment
	Rolling 3-Month Average	Attainment	Attainment
Sulfates	24 Hour	Attainment	-
Hydrogen Sulfide	1 Hour	-	-
Visibility Reducing Particles	8 Hour	-	-

*Source: Placer County Air Pollution Control District. CEQA Air Quality Handbook. November 21, 2017.*

**Table 5-4  
Air Quality Data Summary (2017-2019)**

Pollutant	Standard	Days Standard Was Exceeded		
		2017	2018	2019
1-Hour Ozone	State	*	0	0
	Federal	*	0	0
8-Hour Ozone	State	*	0	3
	Federal	*	0	4
24-Hour PM <sub>2.5</sub>	Federal	0	*	*
24-Hour PM <sub>10</sub>	State	5	16	2
	Federal	0	2	0
1-Hour Nitrogen Dioxide	State	0	0	0
	Federal	0	0	0

Notes:

- All measurements are from the Lincoln-2885 Moore Road station, with the exception of the 24-hour PM<sub>10</sub> and the 1-hour NO<sub>2</sub> measurements, which are from the Roseville-N Sunrise station.
- \* indicates that sufficient data was not available to determine the value.

*Source: California Air Resources Board. Aerometric Data Analysis and Management (iADAM) System. Available at: <http://www.arb.ca.gov/adam/welcome.html>. Accessed January 2021.*



Meteorological conditions also affect the dispersion of odor emissions, which determines the exposure concentration of odiferous compounds at receptors. The predominant wind direction in an area influences which receptors are exposed to the odiferous compounds generated by a nearby source. Receptors located upwind from a large odor source may not be affected due to the produced odiferous compounds being dispersed away from the receptors. Wind speed also influences the degree to which odor emissions are dispersed away from any area.

Odiferous compounds could be generated from a variety of source types including both construction and operational activities. Examples of common land use types that typically generate significant odor impacts include, but are not limited to, wastewater treatment plants, sanitary landfills, composting/green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants.

### **Sensitive Receptors**

Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, day care centers, playgrounds, and medical facilities. The nearest sensitive receptors to the project site, under the adjusted baseline, would be the single-family residences associated with the Bickford Ranch Specific Plan (BRSP) Phase 1. The closest residences would be approximately 1,000 feet west of the western site boundary.

### **Greenhouse Gas Emissions**

GHGs are gases that absorb and emit radiation within the thermal infrared range, trapping heat in the earth's atmosphere. Some GHGs occur naturally and are emitted into the atmosphere through both natural processes and human activities. Other GHGs are created and emitted solely through human activities. The principal GHGs that enter the atmosphere due to human activities are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and fluorinated carbons. Other common GHGs include water vapor, ozone, and aerosols. The increase in atmospheric concentrations of GHG due to human activities has resulted in more heat being held within the atmosphere, which is the accepted explanation for global climate change.

The primary GHG emitted by human activities is CO<sub>2</sub>, with the next largest components being CH<sub>4</sub> and N<sub>2</sub>O. A wide variety of human activities result in the emission of CO<sub>2</sub>. Some of the largest sources of CO<sub>2</sub> include the burning of fossil fuels for transportation and electricity, industrial processes including fertilizer production, agricultural processing, and cement production. The primary sources of CH<sub>4</sub> emissions include domestic livestock sources, decomposition of wastes in landfills, releases from natural gas systems, coal mine seepage, and manure management. The main human activities producing N<sub>2</sub>O are agricultural soil management, fuel combustion in motor vehicles, nitric acid production, manure management, and stationary fuel combustion. Emissions of GHG by economic sector indicate that energy-related activities account for the majority of U.S. emissions. Electricity generation is the largest single-source of GHG emissions, and transportation is the second largest source, followed by industrial activities. The agricultural, commercial, and residential sectors account for the remainder of GHG emission sources.<sup>10</sup>

<sup>10</sup> U.S. Environmental Protection Agency. *Sources of Greenhouse Gas Emissions*. Available at: [https://19january2017snapshot.epa.gov/ghgemissions/sources-greenhouse-gas-emissions\\_.html](https://19january2017snapshot.epa.gov/ghgemissions/sources-greenhouse-gas-emissions_.html). Accessed August 2020.



Emissions of GHG are partially offset by uptake of carbon and sequestration in trees, agricultural soils, landfilled yard trimmings and food scraps, and absorption of CO<sub>2</sub> by the Earth's oceans. Additional emission reduction measures for GHG could include, but are not limited to, compliance with local, State, or federal plans or strategies for GHG reductions, on-site and off-site mitigation, and project design features. Attainment concentration standards for GHGs have not been established by the federal or State government.

### Global Warming Potential

Global Warming Potential (GWP) is one type of simplified index (based upon radiative properties) that can be used to estimate the potential future impacts of emissions of various gases. According to the USEPA, the global warming potential of a gas, or aerosol, to trap heat in the atmosphere is the “cumulative radiative forcing effects of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas.” The reference gas for comparison is CO<sub>2</sub>. GWP is based on a number of factors, including the heat-absorbing ability of each gas relative to that of CO<sub>2</sub>, as well as the decay rate of each gas relative to that of CO<sub>2</sub>. Each gas's GWP is determined by comparing the radiative forcing associated with emissions of that gas versus the radiative forcing associated with emissions of the same mass of CO<sub>2</sub>, for which the GWP is set at one. Methane gas, for example, is estimated by the USEPA to have a comparative global warming potential 25 times greater than that of CO<sub>2</sub>, as shown in Table 5-5.

<b>Gas</b>	<b>Atmospheric Lifetime (years)</b>	<b>Global Warming Potential (100-year time horizon)</b>
Carbon Dioxide (CO <sub>2</sub> )	See footnote <sup>1</sup>	1
Methane (CH <sub>4</sub> )	12	25
Nitrous Oxide (N <sub>2</sub> O)	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC: Tetrafluoromethane (CF <sub>4</sub> )	50,000	7,390
PFC: Hexafluoroethane (C <sub>2</sub> F <sub>6</sub> )	10,000	12,200
Sulfur Hexafluoride (SF <sub>6</sub> )	3,200	22,800

<sup>1</sup> For a given amount of CO<sub>2</sub> emitted, some fraction of the atmospheric increase in concentration is quickly absorbed by the oceans and terrestrial vegetation, some fraction of the atmospheric increase will only slowly decrease over a number of years, and a small portion of the increase will remain for many centuries or more.

**Source: USEPA. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019 [Table 1-2]. April 14, 2021.**

As shown in the table, at the extreme end of the scale, sulfur hexafluoride is estimated to have a comparative GWP 22,800 times that of CO<sub>2</sub>. The “specified time horizon” is related to the atmospheric lifetimes of such GHGs, which are estimated by the USEPA to vary from 50 to 200 years for CO<sub>2</sub>, to 50,000 years for CF<sub>4</sub>. Longer atmospheric lifetimes allow GHG to buildup in the atmosphere; therefore, longer lifetimes correlate with the GWP of a gas. The common indicator for GHG is expressed in terms of metric tons of CO<sub>2</sub> equivalents (MTCO<sub>2</sub>e), which is calculated based on the GWP for each pollutant.



## Effects of Global Climate Change

Uncertainties exist as to exactly what the climate changes will be in various areas of the Earth. According to the Intergovernmental Panel on Climate Change's Working Group II Report, *Climate Change 2007: Impacts, Adaptation and Vulnerability*,<sup>11</sup> climate change impacts to North America may include:

- Diminishing snowpack;
- Increasing evaporation;
- Exacerbated shoreline erosion;
- Exacerbated inundation from sea level rising;
- Increased risk and frequency of wildfire;
- Increased risk of insect outbreaks;
- Increased experiences of heat waves; and
- Rearrangement of ecosystems as species and ecosystems shift northward and to higher elevations.

For California, climate change has the potential to cause/exacerbate the following environmental impacts:

- Increased frequency, duration, and intensity of conditions conducive to air pollution formation (particularly ozone);
- Reduced precipitation, changes to precipitation and runoff patterns, reduced snowfall (precipitation occurring as rain instead of snow), earlier snowmelt, decreased snowpack, and increased agricultural demand for water;
- Increased growing season and increased growth rates of weeds, insect pests and pathogens;
- Inundation by sea level rise;
- Increased incidents and severity of wildfire events; and
- Expansion of the range and increased frequency of pest outbreaks.

In Placer County, specifically, effects of climate change will be more localized. Such hazards include agriculture and forestry pests and diseases, avalanche, drought, extreme heat, flooding, fog, human health hazards, landslides, severe weather, severe winter weather, and wildfire. Some hazards, such as wildfire and drought, relate directly to the occurrence of other hazards, such as agriculture and forestry pests and diseases, landslides, and flooding. Placer County is currently experiencing some of the aforementioned changes, and others may not occur for several decades.<sup>12</sup>

## Energy

California is one of the highest energy demanding states within the nation. Activities such as heating and cooling structures, lighting, the movement of goods, agricultural production, and

<sup>11</sup> Intergovernmental Panel on Climate Change, 2014: Summary for policymakers. In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

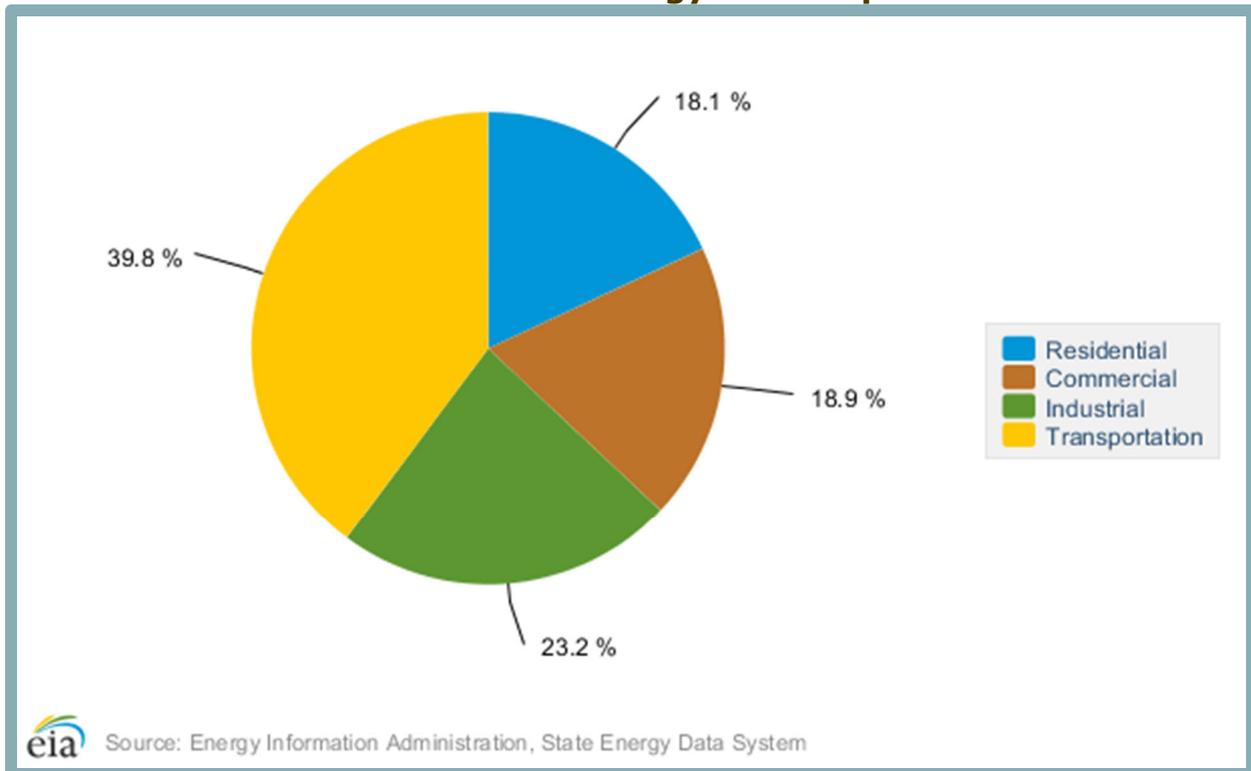
<sup>12</sup> Placer County Community Development Resource Agency. *Placer County Sustainability Plan: A Greenhouse Gas Emission Reduction Plan and Adaptation Strategy* [pg. 14]. January 28, 2020.



countless other facets of daily life consume a variety of energy sources. Energy within the State is provided primarily by the combustion of fossil fuels such as natural gas, motor gasoline, diesel, jet fuel, and, to a lesser extent, coal. In addition to the fossil fuel-based energy sources, the State is ranked second in the nation in renewable energy generation, which includes solar, geothermal, wind, and biomass resources. In fact, California leads the nation in solar thermal electricity capacity, with 73 percent of the nation's total solar thermal capacity installed within the State.<sup>13</sup>

Figure 5-1 presents energy consumption within California for the most recent year for which data is available, 2018. As shown in the figure, transportation-related activity consumes the largest single share of energy within the State. Within the transportation sector, motor gasoline is the dominant form of energy, with jet fuel, diesel, natural gas, and electricity supplying the remaining portions of California's transportation sector energy demand. However, when considered together, energy demand from the built-environment including the residential, commercial, and industrial sectors, represents the greatest share of total statewide energy demand.

**Figure 5-1**  
**2018 California Energy Consumption**



Source: U.S. Energy Information Administration. *California: State Profile and Energy Estimates*. Accessible at: <https://www.eia.gov/state/index.php?sid=CA>. Accessed April 2021.

Electricity is provided to California consumers through a mix of sources including natural gas, hydroelectric, non-hydroelectric renewable sources, nuclear, coal, and petroleum. Of the foregoing sources of electricity, natural gas provided the greatest amount of electricity at approximately 45 percent of California's statewide supply in 2018. Meanwhile, non-hydroelectric

<sup>13</sup> U.S. Energy Information Administration. *California: State Profile and Energy Estimates*. Available at: <https://www.eia.gov/state/index.php?sid=CA>. Accessed December 2020.



based sources of renewable energy provided an additional 35 percent of the state's energy, with hydroelectric and nuclear providing nine and 11 percent, respectively. Coal contributed less than 0.2 percent of the State's total electricity supply.

In the year 2019, the entire State consumed approximately 279,401.90 gigawatt hours (GWh) of electricity. Of the total electricity consumed by the State, Placer County consumed approximately 2,914.87 GWh, which constitutes approximately 1.04 percent of the total energy consumed within the State.<sup>14</sup>

California residents and businesses consume petroleum products for various purposes including on-road vehicles, off-road equipment, and air travel. In 2018, 49 percent of all petroleum products consumed within California consisted of motor gasoline. The second largest demand on petroleum products is jet fuel, which represents 19 percent of the petroleum products consumed, while distillate fuel oils, which includes diesel fuel, represents 16 percent of the total petroleum products demanded within the State.<sup>15</sup>

### **Energy Consumption at the Project Site**

The project site is currently undeveloped, consisting primarily of grasses, oak woodland, and scattered rock outcroppings. As a result, the project site does not generate any energy demand nor result in any energy consumption.

## **5.3 REGULATORY CONTEXT**

Air quality, GHG emissions, and energy are monitored and regulated through the efforts of various international, federal, State, and local government agencies. Agencies work jointly and individually to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for regulating and improving the air quality within the project area and monitoring or reducing GHG emissions and energy consumption are discussed below.

### **Federal Regulations Related to Air Quality**

The following discussion provides a summary of the federal regulations relevant to air quality, organized by pollutant type.

#### **Criteria Pollutants**

The FCAA, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The USEPA is responsible for implementing most aspects of the FCAA, including setting NAAQS for major air pollutants; setting hazardous air pollutant standards; approving state attainment plans; setting motor vehicle emission standards; issuing stationary source emission standards and permits; and establishing acid rain control measures, stratospheric ozone protection measures, and enforcement provisions. Under the FCAA, NAAQS are established for the following criteria pollutants: ozone, CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and lead.

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The NAAQS (other than for ozone, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and those

<sup>14</sup> California Energy Commission. *Electricity Consumption by County*. Available at: <http://ecdms.energy.ca.gov/elecbycounty.aspx>. Accessed April 2021.

<sup>15</sup> U.S. Energy Information Administration. *California: State Profile and Energy Estimates*. Available at: <https://www.eia.gov/state/index.php?sid=CA>. Accessed December 2020.



based on annual averages or arithmetic mean) are not to be exceeded more than once per year. NAAQS for ozone, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> are based on statistical calculations over one- to three-year periods, depending on the pollutant. The FCAA requires the USEPA to reassess the NAAQS at least every five years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a state implementation plan that demonstrates how those areas will attain the standards within mandated time frames.

### **Hazardous Air Pollutants/Toxic Air Contaminants**

The 1977 FCAA amendments required the USEPA to identify national emission standards for hazardous air pollutants to protect public health and welfare. Hazardous air pollutants include certain volatile organic chemicals, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 FCAA Amendments, which expanded the control program for hazardous air pollutants, 189 substances and chemical families were identified as hazardous air pollutants.

### **Federal Regulations Related to GHG Emissions**

The following are the federal regulations relevant to GHG emissions.

#### **Federal Vehicle Standards**

In 2007, in response to the *Massachusetts v. EPA* U.S. Supreme Court ruling, the Bush Administration issued Executive Order (EO) 13432 directing the USEPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the National Highway Transportation Safety Administration (NHTSA) issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011; and, in 2010, the USEPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012 through 2016 (75 FR 25324–25728).

In 2010, President Obama issued a memorandum directing the Department of Transportation, Department of Energy, USEPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the USEPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017 through 2025 light-duty vehicles. The proposed standards were projected to achieve emission rates as low as 163 grams per mile of CO<sub>2</sub> by model year 2025 on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if the foregoing emissions level was achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017 through 2021 (77 FR 62624–63200), and NHTSA intended to set standards for model years 2022 through 2025 in future rulemaking.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the USEPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014 through 2018. The standards for CO<sub>2</sub> emissions and fuel consumption are tailored to three main vehicle categories: combination tractors; heavy-duty pickup trucks and vans; and vocational vehicles. According to the USEPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by six to 23 percent over the 2010 baselines (76 FR 57106–57513).



In August 2016, the USEPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program would have applied to vehicles with model years 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types of sizes of buses and work trucks. The final standards were expected to lower CO<sub>2</sub> emissions by approximately 1.1 billion MT, and reduce oil consumption by up to two billion barrels over the lifetime of the vehicles sold under the program.

In August 2018, the USEPA and NHTSA proposed to amend certain fuel economy and GHG standards for passenger cars and light trucks and establish new, less-stringent standards for model years 2021 through 2026. Compared to maintaining the post-2020 standards that were previously in place, the 2018 proposal would increase U.S. fuel consumption by approximately 0.5 million barrels per day, and would impact the global climate by 3/1000<sup>th</sup> of 1°C by 2100. California and other states stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures, and committed to cooperating with other countries to implement global climate change initiatives.

On September 27, 2019, the USEPA and NHTSA published the *Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program* (84 FR 51,310), which became effective November 26, 2019. The Part One Rule revokes California's authority to set its own GHG emissions standards and set zero-emission-vehicle mandates in California. On March 31, 2020, the USEPA and NHTSA issued the Part Two Rule, which sets CO<sub>2</sub> emissions standards and corporate average fuel economy standards for passenger vehicles and light-duty trucks for model years 2021 through 2026. On January 20, 2021, President Joe Biden issued an EO on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, which includes review of the Part One Rule by April 2021 and review of the Part Two Rule by July 2021. Implementation of both rules will be determined by the results of these reviews.

### **Federal Regulations Related to Energy**

The following are the federal regulations relevant to energy.

#### **Energy Policy and Conservation Act**

The Energy Policy and Conservation Act was originally enacted in 1975 with the intention of ensuring that all vehicles sold in the U.S. meet established fuel economy standards. Following congressional establishment of the original set of fuel economy standards the U.S. Department of Transportation was tasked with establishing additional on-road vehicle standards and making revisions to standards as necessary. Compliance with established standards is based on manufacturer fleet average fuel economy, which originally applied to both passenger cars and light trucks but did not apply to heavy-duty vehicles exceeding 8,500 pounds in gross vehicle weight. The fuel economy program implemented under the Energy Policy and Conservation Act is known as the Corporate Average Fuel Economy (CAFE) Standards. Updates to the CAFE standards since original implementation have increased fuel economy requirements and begun regulation of medium- and heavy-duty vehicles.

#### **Energy Policy Act of 2005**

The Energy Policy Act of 2005 addressed energy production in the U.S. from various sources. In particular, the Energy Policy Act of 2005 included tax credits, loans, and grants for the implementation of energy systems that would reduce GHG emissions related to energy production.



## **State Regulations Related to Air Quality**

The following discussion summarizes applicable State regulations related to air quality, organized by pollutant type. Only the most prominent and applicable California air quality-related legislation is included below; however, an exhaustive list and extensive details of California air quality legislation can be found at the CARB website (<http://www.arb.ca.gov/html/lawsregs.htm>).

### **Criteria Air Pollutants**

The FCAA delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for ensuring implementation of the CCAA of 1988, responding to the FCAA, and regulating emissions from motor vehicles and consumer products.

CARB has established CAAQS, which are generally more restrictive than the NAAQS. The CAAQS describe adverse conditions; that is, pollution levels must be below these standards before a basin can attain the standard. Air quality is considered “in attainment” if pollutant levels are continuously below the CAAQS and do not violate the standards more than once each year. The CAAQS for ozone, CO, SO<sub>2</sub> (one-hour and 24-hour), NO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. The NAAQS and CAAQS are presented in Table 5-2.

### **Hazardous Air Pollutants/Toxic Air Contaminants**

The State Air Toxics Program was established in 1983 under Assembly Bill (AB) 1807 (Tanner), and involved definition of a list of TACs. The California TAC list identifies more than 700 pollutants, of which carcinogenic and noncarcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. The State list of TACs includes the federally-designated hazardous air pollutants. In 1987, the Legislature enacted the Air Toxics “Hot Spots” Information and Assessment Act of 1987 (AB 2588) to address public concern over the release of TACs into the atmosphere. AB 2588 law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hot spots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over five years. TAC emissions from individual facilities are quantified and prioritized. “High-priority” facilities are required to perform a health risk assessment, and, if specific thresholds are exceeded, the facility operator is required to communicate the results to the public in the form of notices and public meetings.

### **CARB Air Quality and Land Use Handbook**

CARB’s *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB Handbook) addresses the importance of considering health risk issues when siting sensitive land uses, including residential development, in the vicinity of intensive air pollutant emission sources including freeways or high-traffic roads, distribution centers, ports, petroleum refineries, chrome plating operations, dry cleaners, and gasoline dispensing facilities.<sup>16</sup> The CARB Handbook draws upon studies evaluating the health effects of traffic traveling on major interstate highways in metropolitan California centers within Los Angeles (Interstate-405 and

<sup>16</sup> California Air Resources Board. *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005.



Interstate-710), the San Francisco Bay, and San Diego areas. The recommendations identified by CARB, including siting residential uses a minimum distance of 500 feet from freeways or other high-traffic roadways, are consistent with those adopted by the State of California for location of new schools. Specifically, the CARB Handbook recommends, “Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day”.<sup>17</sup>

Importantly, the Introduction chapter of the CARB Handbook clarifies that the guidelines are strictly advisory, recognizing that: “[I]and use decisions are a local government responsibility. The Air Resources Board Handbook is advisory and these recommendations do not establish regulatory standards of any kind.” CARB recognizes that there may be land use objectives as well as meteorological and other site-specific conditions that need to be considered by a governmental jurisdiction relative to the general recommended setbacks, specifically stating, “[t]hese recommendations are advisory. Land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues”.<sup>18</sup>

### Diesel Particulate Matter

In 2000, CARB approved a comprehensive diesel risk reduction plan to reduce diesel emissions, including DPM, from new and existing diesel-fueled vehicles and engines. The regulation is anticipated to result in an 80 percent decrease in statewide diesel health risk by 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression-Ignition (Diesel) Engines and Equipment program. The aforementioned regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. Several Airborne Toxic Control Measures (ATCMs) exist that reduce diesel emissions, including In-Use Off-Road Diesel-Fueled Fleets (13 California Code of Regulations [CCR] 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025).

### Heavy-Duty Diesel Truck and Bus Regulation

CARB adopted the final Heavy-Duty Truck and Bus Regulation, Title 13, Division 3, Chapter 1, Section 2025, on December 31, 2014, to reduce DPM (black carbon) and NO<sub>x</sub> emissions from heavy-duty diesel vehicles. The rule requires DPM filters be applied to newer heavier trucks and buses by January 1, 2012, with older vehicles required to comply by January 1, 2015. The rule requires nearly all diesel trucks and buses to be compliant with the 2010 model year engine requirement by January 1, 2023. CARB also adopted an ATCM to limit idling of diesel-fueled commercial vehicles on December 12, 2013. The rule requires diesel-fueled vehicles with gross vehicle weights greater than 10,000 pounds to idle no more than five minutes at any location (13 CCR 2485).

### **California Health and Safety Code Section 41700**

Section 41700 of the Health and Safety Code states that a person must not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger

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<sup>17</sup> *Ibid.*

<sup>18</sup> *Ibid.*



the comfort, repose, health, or safety of any of those persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. Section 41700 also applies to sources of objectionable odors.

### **Heavy-Duty Vehicle Idling Emission Reduction Program**

On October 20, 2005, CARB approved a regulatory measure to reduce emissions of toxics and criteria pollutants by limiting idling of new and in-use sleeper berth equipped diesel trucks.<sup>19</sup> The regulation established new engine and in-use truck requirements and emission performance requirements for technologies used as alternatives to idling the truck's main engine. For example, the regulation requires 2008 and newer model year heavy-duty diesel engines to be equipped with a non-programmable engine shutdown system that automatically shuts down the engine after five minutes of idling, or optionally meet a stringent NO<sub>x</sub> emission standard. The regulation also requires operators of both in-state and out-of-state registered sleeper berth equipped trucks to manually shut down their engine when idling more than five minutes at any location within California. Emission producing alternative technologies such as diesel-fueled auxiliary power systems and fuel-fired heaters are also required to meet emission performance requirements that ensure emissions are not exceeding the emissions of a truck engine operating at idle.

### **In-Use Off-Road Diesel Vehicle Regulation**

On July 26, 2007, CARB adopted a regulation to reduce DPM and NO<sub>x</sub> emissions from in-use (existing), off-road, heavy-duty diesel vehicles in California.<sup>20</sup> Such vehicles are used in construction, mining, and industrial operations. The regulation is designed to reduce harmful emissions from vehicles by subjecting fleet owners to retrofit or accelerated replacement/repower requirements, imposing idling limitations on owners, operators, renters, or lessees of off-road diesel vehicles. The idling limits require operators of applicable off-road vehicles (self-propelled diesel-fueled vehicles 25 horsepower and up that were not designed to be driven on-road) to limit idling to less than five minutes. The idling requirements are specified in Title 13 of the CCR.

### **State Regulations Related to GHG Emissions**

The statewide GHG emissions regulatory framework is summarized below. The following text describes EOs, legislation, regulations, and other plans and policies that would directly or indirectly reduce GHG emissions and/or address climate change issues. The following discussion does not include an exhaustive list of applicable regulations; rather, only the most prominent and applicable California legislation related to GHG emissions and climate change is included below.

### **State Climate Change Targets**

California has taken a number of actions to address climate change, including EOs, legislation, and CARB plans and requirements, which are summarized below.

#### **EO S-3-05**

EO S-3-05 (June 2005) established California's GHG emissions reduction targets and laid out responsibilities among the State agencies for implementing the EO and for reporting on progress toward the targets. The EO established the following targets:

<sup>19</sup> California Air Resources Board. *Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling*. October 24, 2013. Available at: <http://www.arb.ca.gov/msprog/truck-idling/truck-idling.htm>. Accessed December 2020.

<sup>20</sup> California Air Resources Board. *In-Use Off-Road Diesel Vehicle Regulation*. December 10, 2014. Available at: <http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm>. Accessed December 2020.



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

EO S-3-05 also directed the California EPA to report biannually on progress made toward meeting the GHG targets and the impacts to California due to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. The Climate Action Team was formed, which subsequently issued reports from 2006 to 2010.

### AB 32

In furtherance of the goals established in EO S-3-05, the Legislature enacted AB 32 (Núñez and Pavley). The bill is referred to as the California Global Warming Solutions Act of 2006 (September 27, 2006). AB 32 provided initial direction on creating a comprehensive, multi-year program to limit California's GHG emissions at 1990 levels by 2020 and initiate the transformations required to achieve the State's long-range climate objectives. AB 32 also required that the CARB prepare a "scoping plan" for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020. The CARB's Scoping Plan is described in further detail below.

### CARB's 2007 Statewide Limit on GHG Emissions

In 2007, in accordance with California Health and Safety Code Section 38550, CARB approved a statewide limit on GHG emissions by 2020, consistent with the determined 1990 baseline (427 million metric tons [MMT] CO<sub>2</sub>e).

### EO B-18-12

EO B-18-12 (April 2012) directed State agencies, departments, and other entities under the governor's executive authority to take action to reduce entity-wide GHG emissions by at least 10 percent by 2015 and 20 percent by 2020, as measured against a 2010 baseline. EO B-18-12 also established goals for existing State buildings for reducing grid-based energy purchases and water use.

### EO B-30-15

EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under EO S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing GHG emissions to 40 percent below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80 percent below 1990 levels by 2050 as set forth in EO S-3-05. To facilitate achieving this goal, EO B-30-15 called for an update to the CARB's *Climate Change Scoping Plan: A Framework for Change* (Scoping Plan) to express the 2030 target in terms of MMT CO<sub>2</sub>e. The CARB's Scoping Plan is discussed in further detail below. The EO also called for State agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets.

### Senate Bill (SB) 32 and AB 197

SB 32 and AB 197 (enacted in 2016) are companion bills. SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, to provide ongoing oversight over implementation of the State's climate policies. AB 197 also added two members of the Legislature to the Board as non-voting members; requires CARB to make available and update (at least annually via the CARB's



website) emissions data for GHGs, criteria air pollutants, and TACs from reporting facilities; and requires CARB to identify specific information for GHG emissions reduction measures when updating the Scoping Plan.

### CARB's Climate Change Scoping Plan

One specific requirement of AB 32 is for CARB to prepare a scoping plan for achieving the maximum technologically feasible and cost-effective GHG emission reductions by 2020 (Health and Safety Code Section 38561[a]), and to update the Scoping Plan at least once every five years. In 2008, CARB approved the first Scoping Plan. The Scoping Plan included a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives. The key elements of the Scoping Plan include the following:

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
2. Achieving a statewide renewable energy mix of 33 percent;
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions;
4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
5. Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard (LCFS) (17 CCR, Section 95480 et seq.); and
6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State's long-term commitment to AB 32 implementation.

The Scoping Plan also identified local governments as essential partners in achieving California's goals to reduce GHG emissions because they have broad influence and, in some cases, exclusive authority over activities that contribute to significant direct and indirect GHG emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Specifically, the Scoping Plan encouraged local governments to adopt a reduction goal for municipal operations and for community emissions to reduce GHGs by approximately 15 percent from then levels (2008) by 2020. Many local governments developed community-scale local GHG reduction plans based on this Scoping Plan recommendation.

In 2014, CARB approved the first update to the Scoping Plan. The *First Update to the Climate Change Scoping Plan: Building on the Framework* (First Update) defined the State's GHG emission reduction priorities for the next five years and laid the groundwork to start the transition to the post-2020 goals set forth in EO S-3-05 and EO B-16-2012. The First Update concluded that California is on track to meet the 2020 target but recommended a 2030 mid-term GHG reduction target be established to ensure a continuation of action to reduce emissions. The First Update recommended a mix of technologies in key economic sectors to reduce emissions through 2050, including energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies. As part of the First Update, CARB recalculated the State's 1990 emissions level using more recent



GWPs identified by the Intergovernmental Panel on Climate Change, from 427 MMT CO<sub>2</sub>e to 431 MMT CO<sub>2</sub>e.

In 2015, as directed by EO B-30-15, CARB began working on an update to the Scoping Plan to incorporate the 2030 target of 40 percent below 1990 levels by 2030 to keep California on a trajectory toward meeting or exceeding the long-term goal of reducing GHG emissions to 80 percent below 1990 levels by 2050, as set forth in EO S-3-05. Governor Jerry Brown called on California to pursue a new and ambitious set of strategies, in line with the five climate change pillars from his inaugural address, to reduce GHG emissions and prepare for the unavoidable impacts of climate change. In summer 2016, the Legislature affirmed the importance of addressing climate change through passage of SB 32 (Pavley, Chapter 249, Statutes of 2016).

In December 2017, CARB adopted California's *2017 Climate Change Scoping Plan* (2017 Scoping Plan) for public review and comment. The 2017 Scoping Plan builds on the successful framework established in the initial Scoping Plan and First Update while identifying new, technologically feasible and cost-effective strategies that will serve as the framework to achieve the 2030 GHG target as established by SB 32 and define the State's climate change priorities to 2030 and beyond. Strategies within the 2017 Scoping Plan include implementing renewable energy and energy efficiency measures, increased stringency of the LCFS, measures identified in the Mobile Source and Freight Strategies, measures identified in the proposed Short-Lived Climate Pollutant (SLCP) Plan, and increased stringency of SB 375 targets (discussed in further detail below). To fill the gap in additional reductions needed to achieve the 2030 target, the 2017 Scoping Plan recommends continuing the Cap-and-Trade Program and a measure to reduce GHGs from refineries by 20 percent.

For local governments, the 2017 Scoping Plan replaced the initial Scoping Plan's 15 percent reduction goal with a recommendation to aim for a community-wide goal of no more than six MTCO<sub>2</sub>e per capita by 2030, and no more than two MTCO<sub>2</sub>e per capita by 2050, which are consistent with the State's long-term goals. Such goals are also consistent with the Under 2 Memorandum of Understanding (Under 2 Coalition 2019) and the Paris Agreement, which were developed around the scientifically based levels necessary to limit global warming to below an increase of 2°C. The 2017 Scoping Plan recognized the benefits of local government GHG planning (e.g., through Climate Action Plans [CAPs]) and provide more information regarding tools CARB is working on to support those efforts. The 2017 Scoping Plan also recognizes the CEQA streamlining provisions for project-level review where a legally adequate CAP exists.

When discussing project-level GHG emissions reduction actions and thresholds in the context of CEQA, the 2017 Scoping Plan states that "achieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development" for project-level CEQA analysis, but also recognizes that such a standard may not be appropriate or feasible for every development project. The 2017 Scoping Plan further provides that "the inability of a project to mitigate its GHG emissions to net zero does not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA."

### CARB's Regulations for the Mandatory Reporting of GHG Emissions

CARB's Regulation for the Mandatory Reporting of GHG Emissions (17 CCR 95100–95157) incorporated by reference certain requirements that the USEPA promulgated in its Final Rule on Mandatory Reporting of GHGs (40 Code of Federal Regulations [CFR] Part 98). Specifically,



Section 95100(c) of the Mandatory Reporting Regulation incorporated those requirements that the USEPA promulgated in the Federal Register on October 30, 2009; July 12, 2010; September 22, 2010; October 28, 2010; November 30, 2010; December 17, 2010; and April 25, 2011. In general, entities subject to the Mandatory Reporting Regulation that emit more than 10,000 MTCO<sub>2e</sub> per year are required to report annual GHGs through the California Electronic GHG Reporting Tool. Certain sectors, such as refineries and cement plants, are required to report regardless of emission levels. Entities that emit more than the 25,000 MTCO<sub>2e</sub> per year threshold are required to have their GHG emission report verified by a CARB-accredited third party.

### **SB 605 and SB 1383**

SB 605 (2014) required CARB to complete a comprehensive strategy to reduce emissions of SLCPs in the State, and SB 1383 (2016) required CARB to approve and implement that strategy by January 1, 2018. SB 1383 also establishes specific targets for the reduction of SLCPs (40 percent below 2013 levels by 2030 for CH<sub>4</sub> and HFCs, and 50 percent below 2013 levels by 2030 for anthropogenic black carbon), and provides direction for reductions from dairy and livestock operations and landfills. Accordingly, CARB adopted its SLCP Reduction Strategy in March 2017. The SLCP Reduction Strategy establishes a framework for the statewide reduction of emissions of black carbon, CH<sub>4</sub>, and fluorinated gases.

### **EO B-55-18**

EO B-55-18 (September 2018) establishes a statewide policy for California to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net-negative emissions thereafter. The goal is an addition to the existing statewide targets of reducing the State's GHG emissions. CARB intends to work with relevant State agencies to ensure that future scoping plan updates identify and recommend measures to achieve the carbon neutrality goal.

### **Mobile Sources**

The following regulations relate to the control of GHG emissions from mobile sources. Mobile sources include both on-road vehicles and off-road equipment.

### **AB 1493**

AB 1493 (Pavley) (July 2002) was enacted in response to the transportation sector accounting for more than half of California's CO<sub>2</sub> emissions. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the State board to be vehicles that are primarily used for non-commercial personal transportation in the State. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards would result in a reduction of approximately 22 percent of GHG emissions compared to the emissions from the 2002 fleet, and the mid-term (2013–2016) standards would result in a reduction of approximately 30 percent. However, as previously described within the Federal Vehicle Standards section, the USEPA's SAFE Vehicles Rule Part One, adopted in November 2019, revokes California's authority to set GHG emissions standards. As the USEPA rule is the subject of pending legal challenges and President Biden issued an EO to review Part One and Part Two, the analysis within this EIR uses the best available information at this time, as set forth in CARB's Emission Factor Database (EMFAC).

### **EO S-1-07**

EO S-1-07 (January 2007, implementing regulation adopted in April 2009) set a declining LCFS for GHG emissions measured in CO<sub>2e</sub> grams per unit of fuel energy sold in California. The target



of the LCFS is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020 (17 CCR 95480 et seq.). Carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered.

### SB 375

SB 375 (Steinberg) (September 2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 requires CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035, and to update those targets every eight years. SB 375 requires the State's 18 regional metropolitan planning organizations to prepare a sustainable communities strategy as part of their Regional Transportation Plans that will achieve the GHG reduction targets set by CARB. If a metropolitan planning organization is unable to devise a sustainable communities strategy to achieve the GHG reduction target, the metropolitan planning organization must prepare an alternative planning strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to California Government Code Section 65080(b)(2)(K), a sustainable communities strategy does not (1) regulate the use of land, (2) supersede the land use authority of cities and counties, or (3) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with the sustainable community strategy. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the State-mandated housing element process.

### Advanced Clean Cars Program and Zero-Emissions Vehicle Program

The Advanced Clean Cars program (January 2012) is an emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars. To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. By 2025, implementation of the rule is anticipated to reduce emissions of smog-forming pollution from cars by 75 percent compared to the average new car sold in 2015. To reduce GHG emissions, CARB, in conjunction with the USEPA and NHTSA, adopted GHG standards for model year 2017 to 2025 vehicles; the standards were estimated to reduce GHG emissions by 34 percent by 2025. The zero-emissions vehicle program acts as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of zero-emissions vehicles and plug-in hybrid electric vehicles in the 2018 to 2025 model years. However, implementation of the Advanced Clean Cars program is contingent upon the outcome of the ongoing SAFE Vehicles Rule litigation.

### EO B-16-12

EO B-16-12 (March 2012) required that State entities under the governor's direction and control support and facilitate the rapid commercialization of zero-emissions vehicles. The order directed CARB, California Energy Commission (CEC), California Public Utilities Commission (CPUC), and other relevant agencies to work with the Plug-In Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to help achieve goals by 2015, 2020, and 2025.



On a statewide basis, EO B-16-12 established a target reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels by 2050. EO B-16-12 did not apply to vehicles that have special performance requirements necessary for the protection of the public safety and welfare.

### AB 1236

AB 1236 (October 2015) (Chiu) required a city, county, or city and county to approve an application for the installation of electric-vehicle charging stations, as defined, through the issuance of specified permits unless the city or county makes specified written findings based on substantial evidence in the record that the proposed installation would have a specific, adverse impact upon the public health or safety, and a feasible method to satisfactorily mitigate or avoid the specific, adverse impact does not exist. The bill provided for appeal of that decision to the planning commission, as specified. AB 1236 required electric-vehicle charging stations to meet specified standards. The bill required a city, county, or city and county with a population of 200,000 or more residents to adopt an ordinance, by September 30, 2016, that created an expedited and streamlined permitting process for electric-vehicle charging stations. The bill also required a city, county, or city and county with a population of less than 200,000 residents to adopt the ordinance by September 30, 2017.

## **Water**

The following regulations relate to the conservation of water, which reduces GHG emissions related to electricity demands from the treatment and transportation of water.

### EO B-29-15

In response to a drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25 percent relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives subsequently became permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the State. In response to EO B-29-15, the California Department of Water Resources modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency, and broadens the applicability of the ordinance to include new development projects with smaller landscape areas.

### EO B-37-16

Issued in May 2016, EO B-37-16 directed the State Water Resources Control Board (SWRCB) to adjust emergency water conservation regulations through the end of January 2017 to reflect differing water supply conditions across the State. The SWRCB also developed a proposal to achieve a mandatory reduction of potable urban water usage that builds off the mandatory 25 percent reduction called for in EO B-29-15. The SWRCB and Department of Water Resources were directed to develop new, permanent water use targets that build upon the existing State law requirements that the State achieve 20 percent reduction in urban water usage by 2020. EO B-37-16 also specifies that the SWRCB permanently prohibit water-wasting practices such as hosing off sidewalks, driveways, and other hardscapes; washing automobiles with hoses not equipped with a shut-off nozzle; using non-recirculated water in a fountain or other decorative water feature; watering lawns in a manner that causes runoff, or within 48 hours after measurable precipitation; and irrigating ornamental turf on public street medians.



### EO B-40-17

EO B-40-17 (April 2017) lifted the drought emergency in all California counties except Fresno, Kings, Tulare, and Tuolumne. It also rescinded EO B-29-15, but expressly stated that EO B-37-16 remains in effect and directed the SWRCB to continue development of permanent prohibitions on wasteful water use.

### **Solid Waste**

The following regulations relate to the generation of solid waste and means to reduce GHG emissions from solid waste produced within the State.

### AB 939 and AB 341

In 1989, AB 939, known as the Integrated Waste Management Act (California Public Resources Code [PRC] Sections 40000 et seq.), was passed because of the observed increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25 percent by 1995 and 50 percent by 2000.

AB 341 (Chapter 476, Statutes of 2011 [Chesbro]) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that the policy goal of the State is that not less than 75 percent of solid waste generated be source-reduced, recycled, or composted by 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery to develop strategies to achieve the State's policy goal.

### **Other State Actions**

The following State regulations are broadly related to GHG emissions.

### SB 97

SB 97 (Dutton) (August 2007) directed the Governor's Office of Planning and Research to develop guidelines under CEQA for the mitigation of GHG emissions. In 2008, the Governor's Office of Planning and Research issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents. The advisory indicated that the lead agency should identify and estimate a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities. The advisory further recommended that the lead agency determine the significance of the impacts and impose all mitigation measures necessary to reduce GHG emissions to a level that is less than significant. The California Natural Resource Agency (CNRA) adopted the CEQA Guidelines amendments in December 2009, and the amended CEQA Guidelines became effective in March 2010.

Under the amended CEQA Guidelines, a lead agency has the discretion to determine whether to use a quantitative or qualitative analysis, or apply performance standards to determine the significance of GHG emissions resulting from a particular project (14 CCR 15064.4[a]). The CEQA Guidelines require a lead agency to consider the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]). The CEQA Guidelines also allow a lead agency to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through the implementation of project features or off-site measures. The adopted amendments do not establish a GHG emission threshold, instead



allowing a lead agency to develop, adopt, and apply the lead agency's own thresholds of significance or those developed by other agencies or experts. CNRA acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions.

With respect to GHG emissions, the CEQA Guidelines state that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions (14 CCR 15064.4[a]). The CEQA Guidelines note that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions or by relying on "qualitative analysis or other performance based standards" (14 CCR 15064.4[a]). Section 15064.4(b) states that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment: (1) the extent to which a project may increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]).

### EO S-13-08

EO S-13-08 (November 2008) is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. Therefore, the EO directs State agencies to take specified actions to assess and plan for such impacts. The final 2009 California Climate Adaptation Strategy report was issued in December 2009, and an update, *Safeguarding California: Reducing Climate Risk*, followed in July 2014. To assess the State's vulnerability, the report summarizes key climate change impacts to the State for the following areas: agriculture, biodiversity and habitat, emergency management, energy, forestry, ocean and coastal ecosystems and resources, public health, transportation, and water. Issuance of the *Safeguarding California: Implementation Action Plans* followed in March 2016. In January 2018, the CNRA released the *Safeguarding California Plan: 2018 Update*, which communicates current and needed actions that the State government should take to build climate change resiliency.

### State Regulations Related to Energy

The State has adopted various regulations aimed at reducing energy consumption, increasing energy efficiency, and mandating sourcing requirements for electricity production.

### **Building Energy**

The following regulations relate to energy efficiency and energy use reductions in the built environment.

### Title 24, Part 6

Title 24 of the CCR was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically established Building Energy Efficiency Standards that are designed to ensure new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. These energy efficiency standards are reviewed periodically, and revised if necessary, by the Building Standards Commission and CEC (PRC Section 25402[b][1]). The regulations receive input from members of industry, as well as the public, with the goal of "reducing of wasteful, uneconomic, inefficient, or unnecessary consumption of energy" (PRC Section 25402). The regulations are scrutinized and analyzed for technological and economic



feasibility (PRC Section 25402[d]) and cost effectiveness (PRC Sections 25402[b][2] and [b][3]). As a result, the standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The 2019 Title 24 standards are the currently applicable building energy efficiency standards and became effective on January 1, 2020. The 2019 Title 24 Building Energy Efficiency Standards reduced energy used and associated GHG emissions compared to the previous 2016 Title 24 standards. In general, single-family residences built to the 2019 standards are anticipated to use approximately seven percent less energy due to energy efficiency measures than those built to the 2016 standards; once rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards use approximately 53 percent less energy than those under the 2016 standards. Nonresidential buildings built to the 2019 standards use an estimated 30 percent less energy than those built to the 2016 standards.

### Title 24, Part 11

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen, and establishes minimum mandatory standards and voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and State-owned buildings and schools and hospitals. The original CALGreen standards have been updated several times. The CALGreen 2019 standards, which are the current standards, improved upon the 2016 CALGreen standards, and went into effect on January 1, 2020. The mandatory standards require the following:

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings;
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance;
- 65 percent of construction and demolition waste must be diverted from landfills;
- Mandatory inspections of energy systems to ensure optimal working efficiency;
- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations; and
- Low-pollutant-emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards.

The CALGreen standards also include voluntary efficiency measures that are provided at two tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15 percent improvement in energy requirements, stricter water conservation, 65 percent diversion of construction and demolition waste, 10 percent recycled content in building materials, 20 percent permeable paving, 20 percent cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30 percent improvement in energy requirements, stricter water conservation, 80 percent diversion of construction and demolition waste, 15 percent recycled content in building materials, 30 percent permeable paving, 25 percent cement reduction, and cool/solar-reflective roofs.



## Title 20

Title 20 of the CCR requires manufacturers of appliances to meet State and federal standards for energy and water efficiency. The CEC certifies an appliance based on a manufacturer's demonstration that the appliance meets the standards. New appliances regulated under Title 20 include refrigerators, refrigerator-freezers, and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwashers; clothes washers and dryers; cooking products; electric motors; low-voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing each type of appliance covered under the regulations, and appliances must meet the standards for energy performance, energy design, water performance, and water design. Title 20 contains three types of standards for appliances: federal and State standards for federally regulated appliances, State standards for federally regulated appliances, and State standards for non-federally regulated appliances.

## SB 1

SB 1 (Murray) (August 2006) established a \$3 billion rebate program to support the goal of the State to install rooftop solar energy systems with a generation capacity of 3,000 megawatts through 2016. SB 1 added sections to the PRC, including Chapter 8.8 (California Solar Initiative), that require building projects applying for ratepayer-funded incentives for photovoltaic systems to meet minimum energy efficiency levels and performance requirements. Section 25780 established that it is a goal of the State to establish a self-sufficient solar industry. The goals included establishing solar energy systems as a viable mainstream option for homes and businesses within 10 years of adoption, and placing solar energy systems on 50 percent of new homes within 13 years of adoption. SB 1, also termed "Go Solar California," was previously titled "Million Solar Roofs."

## AB 1470

AB 1470 established the Solar Water Heating and Efficiency Act of 2007. The bill made findings and declarations of the Legislature relating to the promotion of solar water heating systems and other technologies that reduce natural gas demand. AB 1470 required the CEC to evaluate the data available from a specified pilot program, and, if the CEC made a specified determination, to design and implement a program of incentives for the installation of 200,000 solar water heating systems in homes and businesses throughout the State by 2017.

## AB 1109

Enacted in 2007, AB 1109 required the CEC to adopt minimum energy efficiency standards for general-purpose lighting to reduce electricity consumption by 50 percent for indoor residential lighting and by 25 percent for indoor commercial lighting.

## **Renewable Energy and Energy Procurement**

The following regulations relate to the source of electricity provided to consumers within the State, as well as standards related to the generation of electricity within the State.

### Renewable Portfolio Standard (RPS) and SB 100

Established in 2002 under SB 1078, accelerated in 2006 under SB 107, and expanded in 2011 under SB 2, California's RPS is one of the most ambitious renewable energy standards in the country. The RPS program requires investor-owned utilities, electric service providers, and



community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020.

Since the inception of the RPS program, the program has been extended and enhanced multiple times. In 2015, SB 350 extended the State's RPS program by requiring that publicly owned utilities procure 50 percent of their electricity from renewable energy sources by 2030. The requirements of SB 350 were expanded and intensified in 2018 through the adoption of SB 100, which mandated that all electricity generated within the State by publicly owned utilities be generated through carbon-free sources by 2045. In addition, SB 100 increased the previous renewable energy requirement for the year 2030 by 10 percent; thus, requiring that 60 percent of electricity generated by publicly owned utilities originate from renewable sources by the year 2030.

### **Local Regulations**

The most prominent local regulations related to air quality, GHG emissions, and energy are established by the PCAPCD and the Placer County General Plan and are discussed in further detail below.

### **Placer County Air Pollution Control District**

The PCAPCD regulates many sources of pollutants in the ambient air as well as GHG emissions, and is responsible for implementing certain programs and regulations for controlling air pollutant and GHG emissions to improve air quality in order to attain federal and State AAQS and reduce GHG emissions in compliance with State goals.

### **Air Quality Attainment Plan**

As a part of the SVAB federal ozone nonattainment area, the PCAPCD works with the other local air districts within the Sacramento area to develop a regional air quality management plan under the FCAA requirement. The regional air quality management plan is called the State Implementation Plan (SIP) which describes and demonstrates how Placer County, as well as the Sacramento nonattainment area, would attain the required federal ozone standard by the proposed attainment deadline. In accordance with the requirements of the FCAA, the PCAPCD, along with the other air districts in the region, prepared the *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (Ozone Attainment Plan), adopted by the PCAPCD on February 19, 2009. The CARB determined that the Ozone Attainment Plan met federal Clean Air Act requirements and approved the Plan on March 26, 2009 as a revision to the SIP. Revisions to the Placer County portion of the SIP or Ozone Attainment Plan were made and adopted on August 11, 2011. An update to the plan, *2013 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (2013 Ozone Attainment Plan), was adopted on September 26, 2013, and approved by CARB as a revision to the SIP on November 21, 2013. The 2013 Ozone Attainment Plan was approved by the USEPA on January 9, 2015. In addition, another update was prepared in 2017. The *2017 Sacramento Regional 2008 NAAQS 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (2017 Ozone Attainment Plan) demonstrates how the region will attain the 2008 ozone NAAQS, and includes an updated emissions inventory, sets motor vehicle emissions budgets, and documents the modeling used to support the attainment demonstration.

It should be noted that in addition to strengthening the 8-hour ozone NAAQS, the USEPA also strengthened the secondary 8-hour ozone NAAQS, making the secondary standard identical to the primary standard. The SVAB remains classified as a severe nonattainment area for ozone with an attainment deadline of 2027. On October 26, 2015, the USEPA released a final



implementation rule for the revised NAAQS for ozone to address the requirements for reasonable further progress, modeling and attainment demonstrations, and reasonably available control measures (RACM) and reasonably available control technology (RACT). On April 30, 2018, the USEPA published designations for areas in attainment/unclassifiable for the 2015 ozone standards. The USEPA identified the portions of Placer County within the SVAB as nonattainment for the 2015 ozone standards.<sup>21</sup>

### PCAPCD Rules and Regulations

All projects under the jurisdiction of the PCAPCD are required to comply with all applicable PCAPCD rules and regulations. In addition, PCAPCD permit requirements apply to many commercial activities (e.g., print shops, drycleaners, gasoline stations), and other miscellaneous activities (e.g., demolition of buildings containing asbestos). The proposed project is required to comply with all applicable PCAPCD rules and regulations, which shall be noted on County-approved construction plans. The PCAPCD regulations and rules include, but are not limited to, the following:

#### *Regulation 2 – Prohibitions*

Regulation 2 is comprised of prohibitory rules that are written to achieve emission reductions from specific source categories. The rules are applicable to existing sources as well as new sources. Examples of prohibitory rules include Rule 202 related to visible emissions, Rule 217 related to asphalt paving materials, Rule 218 related to architectural coatings, Rule 228 related to fugitive dust, Rule 205 related to nuisance, and Rule 225 related to wood-burning appliances.

Rule 228 sets forth requirements necessary to comply with the Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations (Title 17, Section 93105, of the CCR), as discussed above.

#### *Regulation 5 – Permits*

Regulation 5 is intended to provide an orderly procedure for the review of new sources, and modification and operation of existing sources, of air pollution through the issuance of permits. Regulation 5 primarily deals with permitting major emission sources and includes, but is not limited to, rules such as General Permit Requirements (Rule 501), New Source Review (Rule 502), Emission Statement (Rule 503), Emission Reduction Credits (Rule 504), and Toxics New Source Review (Rule 513).

### **Placer County General Plan**

The following goals and policies related to air quality are from the Placer County General Plan:

#### Air Quality – General

- Goal 6.F To protect and improve air quality in Placer County.
- Policy 6.F.2 The County shall develop mitigation measures to minimize stationary source and area source emissions.
- Policy 6.F.3 The County shall support the Placer County Air Pollution Control District (PCAPCD) in its development of improved ambient air

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<sup>21</sup> U.S. Environmental Protection Agency. *Nonattainment and Unclassifiable Area Designations for the 2015 Ozone Standards*. April 30, 2018.



quality monitoring capabilities and the establishment of standards, thresholds, and rules to more adequately address the air quality impacts of new development.

- Policy 6.F.4 The County shall solicit and consider comments from local and regional agencies on proposed projects that may affect regional air quality.
- Policy 6.F.5 The County shall encourage project proponents to consult early in the planning process with the County regarding the applicability of Countywide indirect and areawide source programs and transportation control measures (TCM) programs. Project review shall also address energy-efficient building and site designs and proper storage, use, and disposal of hazardous materials.
- Policy 6.F.6 The County shall require project-level environmental review to include identification of potential air quality impacts and designation of design and other appropriate mitigation measures or offset fees to reduce impacts. The County shall dedicate staff to work with project proponents and other agencies in identifying, ensuring the implementation of, and monitoring the success of mitigation measures.
- Policy 6.F.7 The County shall encourage development to be located and designed to minimize direct and indirect air pollutants.
- Policy 6.F.8 The County shall submit development proposals to the PCAPCD for review and comment in compliance with CEQA prior to consideration by the appropriate decision-making body.
- Policy 6.F.9 In reviewing project applications, the County shall consider alternatives or amendments that reduce emissions of air pollutants.
- Policy 6.F.10 The County may require new development projects to submit an air quality analysis for review and approval. Based on this analysis, the County shall require appropriate mitigation measures consistent with the PCAPCD's 1991 Air Quality Attainment Plan (or updated edition).
- Policy 6.F.11 The County shall apply the buffer standards described in Part I of this Policy Document and meteorological analyses to provide separation between possible emission/nuisance sources (such as industrial and commercial uses) and residential uses.

### Air Quality – Transportation/Circulation

Goal 6.G To integrate air quality planning with the land use and transportation planning process.



- Policy 6.G.1 The County shall require new development to be planned to result in smooth flowing traffic conditions for major roadways. This includes traffic signals and traffic signal coordination, parallel roadways, and intra- and inter-neighborhood connections where significant reductions in overall emissions can be achieved.
- Policy 6.G.2 The County shall continue and, where appropriate, expand the use of synchronized traffic signals on roadways susceptible to emissions improvement through approach control.
- Policy 6.G.3 The County shall encourage the use of alternative modes of transportation by incorporating public transit, bicycle, and pedestrian modes in County transportation planning and by requiring new development to provide adequate pedestrian and bikeway facilities.
- Policy 6.G.5 The County shall endeavor to secure adequate funding for transit services so that transit is a viable transportation alternative. New development shall pay its fair share of the cost of transit equipment and facilities required to serve new projects.
- Policy 6.G.6 The County shall require large new developments to dedicate land for and construct appropriate improvements for park-and-ride lots, if suitably located.

### Transportation – Non-Motorized Transportation

- Goal 3.D To provide a safe, comprehensive, and integrated system of facilities for non-motorized transportation.
- Policy 3.D.5 The County shall continue to require developers to finance and install pedestrian walkways, equestrian trails, and multi-purpose paths in new development, as appropriate.
- Policy 3.D.7 The County shall, where appropriate, require new development to provide sheltered public transit stops, with turnouts.
- Policy 3.D.9 Consider Complete Streets infrastructure and design features in street design and construction to create safe and inviting environments for all users consistent with the land uses to be served.

### **Placer County Sustainability Plan**

The Placer County Sustainability Plan (PCSP), adopted by the Placer County Board of Supervisors on January 28, 2020, includes goals and policies for energy efficiency and the reduction of GHGs.<sup>22</sup> The PCSP is a planning document that outlines the programs and policies that are recommended for implementation by the community and the County to achieve the most

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<sup>22</sup> Placer County Community Development and Resource Agency. *Placer County Sustainability Plan: A Greenhouse Gas Emission Reduction Plan and Adaptation Strategy*. January 28, 2020.



significant GHG emission reductions in unincorporated County. In addition to reducing GHG emissions, implementation of the PCSP is intended to help achieve multiple community-wide goals, such as lowering energy costs, reducing air and water pollution, supporting local economic development, and improving public health and quality of life within Placer County.

## **5.4 IMPACTS AND MITIGATION MEASURES**

The standards of significance and methodology used to analyze and determine the proposed project's potential project-specific impacts related to air quality, GHG emissions, and energy are described below. In addition, a discussion of the project's impacts, as well as mitigation measures where necessary, is also presented.

### **Standards of Significance**

Based on the recommendations of PCAPCD and in coordination with the County, consistent with Appendix G of the CEQA Guidelines, the effects of a project are evaluated to determine if they would result in a significant adverse impact on the environment. For the purposes of this EIR, an impact related to air quality, GHG emissions, or energy is considered significant if the proposed project would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations (including localized CO concentrations and TAC emissions);
- Result in other emissions (such as those leading to odors) affecting a substantial number of people;
- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment;
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs;
- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

### **Issues Not Discussed Further**

The Initial Study prepared for the proposed project (see Appendix C) determined that development of the proposed project would result in a less-than-significant impact related to the following:

- Result in other emissions (such as those leading to odors) affecting a substantial number of people; and
- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

For the reasons cited in the Initial Study (Section III, Air Quality, and Section VI, Energy), the potential impacts associated with the above are not analyzed further in this EIR.



### Criteria Pollutant Emissions and Toxic Air Contaminant Emissions

In order to evaluate criteria air pollutant emissions from development projects, the PCAPCD has established significance thresholds for emissions of ROG, NO<sub>x</sub>, and PM<sub>10</sub>. The significance thresholds, expressed in pounds per day (lbs/day), serve as air quality standards in the evaluation of air quality impacts associated with proposed development projects. The PCAPCD's recommended thresholds of significance are listed in Table 5-6.

<b>Table 5-6 PCAPCD Thresholds of Significance</b>		
<b>Pollutant</b>	<b>Construction Threshold (lbs/day)</b>	<b>Operational/Cumulative Threshold (lbs/day)</b>
ROG	82	55
NO <sub>x</sub>	82	55
PM <sub>10</sub>	82	82
<i>Source: Placer County Air Pollution Control District. Placer County Air Pollution Control District Policy. Review of Land Use Projects Under CEQA. October 13, 2016.</i>		

Therefore, if the proposed project's emissions exceed the PCAPCD's pollutant thresholds presented in Table 5-6, the project could have a significant effect on air quality, the attainment of federal and State AAQS, and could conflict with or obstruct implementation of the applicable air quality plan or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment.

Additionally, the PCAPCD has developed screening criteria for determining whether a project would cause substantial localized CO emissions at a given intersection. If the project would result in CO emissions from vehicle operations in excess of 550 lbs/day and either of the following conditions are met, the project could potentially result in substantial concentrations of localized CO and further analysis would be required:

- Degrade the peak hour level of service (LOS) on one or more streets or at one or more intersections (both signalized and non-signalized) in the project vicinity from an acceptable LOS (i.e., LOS A, B, C, or D) to an unacceptable LOS (i.e., LOS E or F); or
- Substantially worsen (i.e., increase delay by 10 seconds or more when project-generated traffic is included) an already existing unacceptable peak hour LOS on one or more streets or at one or more intersections in the project vicinity.<sup>23</sup>

For TAC emissions, if a project would introduce a new source of TAC or a new sensitive receptor near an existing source of TAC that would not meet the CARB's minimum recommended setback, a detailed health risk assessment may be required. The PCAPCD considers an increase in cancer risk levels of more than 10 in one million persons or a non-cancer hazard index greater than 1.0 to be a significant impact related to TACs. The foregoing cancer risk level and non-cancer hazard index are typically applied to individual stationary sources of TACs; however, the PCAPCD does note that the cancer risk and hazard index thresholds may also be applied to activities that are non-stationary, such as diesel delivery trucks and off-road construction equipment.

With regard to other cumulative emissions, such as the cumulative emissions of criteria air pollutants, the PCAPCD directs lead agencies to use the region's existing attainment plans as a

<sup>23</sup> Placer County Air Pollution Control District. *CEQA Air Quality Handbook* [pg. 38]. November 21, 2017.



basis for analysis of cumulative emissions. If a project would interfere with an adopted attainment plan, the project would inhibit the future attainment of AAQS, and thus result in a significant incremental contribution to cumulative emissions. As discussed throughout this Chapter, the PCAPCD's recommended thresholds of significance for ozone precursors and PM<sub>10</sub> are based on attainment plans for the region. Thus, the PCAPCD concluded that if a project's ozone precursor and PM<sub>10</sub> emissions would be less than PCAPCD project-level thresholds, the project would not be expected to conflict with any relevant attainment plans, and would not result in a cumulatively considerable contribution to a significant cumulative impact. As a result, the operational phase cumulative-level emissions thresholds established by PCAPCD are identical to the project-level operational emissions thresholds; the operational/cumulative thresholds are presented in Table 5-6.

### **GHG Emissions**

Nearly all development projects in the region have the potential to generate air pollutants that may increase global climate change. On October 13, 2016, the PCAPCD adopted GHG emissions thresholds. The thresholds were designed to analyze a project's compliance with applicable State laws including AB 32 and SB 32.<sup>24</sup> While designed to assess a project's compliance with State laws, as discussed in the PCAPCD's Justification Report for the thresholds, the District relied on a review of historical CEQA projects within the County during the 13-year period from 2003 to 2015. The District modeled emissions from 688 total projects in the year 2020, and used the modeled emissions to determine a reasonable level to establish emissions thresholds. In addition to modeling past projects within Placer County, the PCAPCD modeled a range of potential future residential and commercial projects to provide additional County-specific evidence in developing the District's thresholds.<sup>25</sup>

The GHG thresholds include a bright-line threshold for the construction and operational phases of land use projects and stationary source projects, a screening level threshold for the operational phase of land use projects, and efficiency thresholds for the operational phase of land use projects that result in GHG emissions that fall between the bright-line threshold and the screening level threshold. The bright-line threshold of 10,000 MTCO<sub>2</sub>e/yr represents the level at which a project's GHG emissions would be substantially large enough to contribute to cumulative impacts and mitigation to lessen the emissions would be mandatory. The PCAPCD further recommends use of the 10,000 MTCO<sub>2</sub>e/yr for analysis of construction-related GHG emissions for land use projects. Any project with GHG emissions below the screening level threshold of 1,100 MTCO<sub>2</sub>e/yr is judged by the PCAPCD as having a less-than-significant impact related to GHG emissions, and would not conflict with any State or regional GHG emissions reduction goals. Projects that would result in GHG emissions above the 1,100 MTCO<sub>2</sub>e/yr screening level threshold, but below the bright-line threshold of 10,000 MTCO<sub>2</sub>e/yr, must result in GHG emissions below the efficiency thresholds in order to be considered to result in a less-than-significant impact related to GHG emissions and not conflict with any State or regional GHG emission reduction goals. The GHG efficiency thresholds, which are in units of MTCO<sub>2</sub>e/yr per capita or per square-foot, are presented in Table 5-7.

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<sup>24</sup> Placer County Air Pollution Control District. *California Environmental Quality Act Thresholds of Significance: Justification Report*. October 2016.

<sup>25</sup> *Ibid.*



<b>Residential (MTCO<sub>2</sub>e/capita)</b>		<b>Non-Residential (MTCO<sub>2</sub>e/1,000 sf)</b>	
<b>Urban</b>	<b>Rural</b>	<b>Urban</b>	<b>Rural</b>
4.5	5.5	26.5	27.3

*Source: Placer County Air Pollution Control District. Placer County Air Pollution Control District Policy. Review of Land Use Projects Under CEQA. October 13, 2016.*

In accordance with CARB and PCAPCD recommendations, the County, as lead agency, uses the currently adopted PCAPCD GHG thresholds of significance as presented above. Therefore, if the proposed project results in construction GHG emissions in excess of 10,000 MTCO<sub>2</sub>e/yr, and/or operational GHG emissions in excess of 1,100 MTCO<sub>2</sub>e/yr and are unable to show that emissions would achieve the efficiency thresholds presented in Table 5-7, the project would be considered to result in a cumulatively considerable contribution to global climate change.

### **Method of Analysis**

The analysis protocol and guidance provided by the PCAPCD's *CEQA Air Quality Handbook*, including screening criteria and pollutant thresholds of significance, was used to analyze the proposed project's air quality impacts.

### **Construction Emissions**

The proposed project's short-term construction emissions were estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 software, which is a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions from land use projects. The model applies inherent default values for various land uses, including trip generation rates based on the Institute of Transportation Engineers (ITE) Manual, vehicle mix, trip length, average speed, etc. However, where project-specific data was available, such data was input into the model. For example, based on applicant-provided information, construction is assumed to commence in September of 2024 and occur over an approximately two-year period. In addition, the modeling included initial establishment of the off-site, 300-foot-wide Fuel Management Zone easement along the project's northern boundary, as well as consideration of the loss of carbon sequestration associated with the proposed project's anticipated removal of oak woodland.

The results of construction emissions estimations were compared to the standards of significance discussed above in order to determine the associated level of impact. All CalEEMod modeling results are included in Appendix D to this EIR.

### **Operational Emissions**

The proposed project's operational emissions were estimated using CalEEMod. Based on project-specific construction information provided by the project applicant, the proposed project is anticipated to be fully operational by 2026. The modeling performed for the proposed project included compliance with PCAPCD rules and regulations (i.e., low-VOC [volatile organic compounds] paints and low-VOC cleaning supplies), as well as with the 2019 California Building Energy Efficiency Standards Code, and the Model Water Efficiency Landscape Ordinance. The proposed project's compliance with such would be verified as part of the County's building permit application review process. Fehr & Peers provided project-specific trip generation rates and



vehicle miles traveled (VMT), which were applied to the project modeling.<sup>26</sup> It should be noted that the project VMT with inclusion of implementation of Mitigation Measure 7-5 was applied to the project modeling. In compliance with the 2019 Title 24 standards, the modeling for project operations included the assumption that 100 percent of the electricity required for project operations would be provided by on-site renewable energy systems. In addition to adjustments related to on-site renewable energy and energy efficiency, the CO<sub>2</sub> intensity factor was adjusted within CalEEMod in order to reflect PG&E's anticipated progress towards the State RPS goals.<sup>27</sup>

The results of operational emissions estimations were compared to the standards of significance discussed above in order to determine the associated level of impact. All CalEEMod modeling results are included in Appendix D to this EIR.

### **Project-Specific Impacts and Mitigation Measures**

The following discussion of impacts is based on implementation of the proposed project in comparison with the standards of significance identified above. It should be noted that GHG emissions are inherently cumulative; thus, the discussion of associated impacts is included under the Cumulative Impacts and Mitigation Measures section below.

#### **5-1 Conflict with or obstruct implementation of the applicable air quality plan during project construction. Based on the analysis below, the impact is less than significant.**

During construction of the project, various types of equipment and vehicles would temporarily operate on the project site. Construction-related emissions would be generated from construction equipment, vegetation clearing and earth movement activities, construction workers' commute, and construction material hauling for the entire construction period. The aforementioned activities would involve the use of diesel- and gasoline-powered equipment that would generate emissions of criteria pollutants. Project construction activities also represent sources of fugitive dust, which includes PM emissions. As construction of the proposed project would generate emissions of criteria air pollutants, including ROG, NO<sub>x</sub>, and PM<sub>10</sub>, intermittently within the site and in the vicinity of the site, until all construction has been completed, construction is a potential concern, as the proposed project is located in a nonattainment area for ozone and PM.

Estimated unmitigated construction-related emissions associated with the proposed project are presented in Table 5-8.

<b>Table 5-8</b>			
<b>Maximum Unmitigated Construction Emissions (lbs/day)</b>			
	<b>ROG</b>	<b>NO<sub>x</sub></b>	<b>PM<sub>10</sub></b>
Maximum Project Emissions	6.70	32.41	19.44
<b>PCAPCD Significance Threshold</b>	<b>82.0</b>	<b>82.0</b>	<b>82.0</b>
<b>Exceeds Threshold?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>
<i>Source: CalEEMod, May 2021 (see Appendix D).</i>			

<sup>26</sup> Fehr & Peers. *Draft Technical Memorandum – The Ridge Subdivision*. August 6, 2020.

<sup>27</sup> California Public Utilities Commission. *California Renewables Portfolio Standard (RPS)*. Available at: <http://www.cpuc.ca.gov/renewables/>. Accessed March 2021.



As shown in the table above, the project's maximum construction-related emissions would be below the applicable PCAPCD thresholds of significance for ROG, NO<sub>x</sub>, and PM<sub>10</sub>.

It should be noted that construction activity related to implementation of the proposed project would be subject to PCAPCD Rule 228. Rule 228 requires projects involving earth-disturbing activities to implement various dust control measures, such as minimizing track-out on to paved public roadways, limiting vehicle travel on unpaved surfaces to 15 miles per hour, and stabilization of storage piles and disturbed areas. Furthermore, standard Placer County conditions of approval for proposed projects within the County include various requirements that would result in additional reductions of emissions related to implementation of the proposed project from what has been estimated and presented above in Table 5-8. The County's standard conditions of approval are listed below:

- The applicant shall submit a Dust Control Plan to the Placer County Air Pollution Control District (APCD) when the project area to be disturbed is greater than one acre. The Dust Control Plan shall be submitted to the APCD a minimum of 21 days before construction activity is scheduled to commence. The Dust Control Plan can be submitted online via a fill-in form:  
<http://www.placerair.org/dustcontrolrequirements/dustcontrolform>.
- With submittal of the Dust Control Plan, the contractor shall submit to the APCD a comprehensive equipment inventory (e.g., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower or greater) that will be used in aggregate of 40 or more hours. If any new equipment is added after submission of the inventory, the contractor shall notify the APCD prior to the new equipment being utilized. At least three business days prior to the use of subject heavy-duty off-road equipment, the project representative shall provide the APCD with the anticipated construction timeline including start date, name, and phone number of the property owner, project manager, and on-site foreman.
- With submittal of the equipment inventory, the contractor shall provide a written calculation to the APCD for approval demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project-wide fleet-average of 20 percent NO<sub>x</sub> reduction and 45 percent particulate reduction comparing with the statewide fleet averages. Acceptable options for reducing emissions may include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. The following link shall be used to calculate compliance with this condition and shall be submitted to the APCD as described above: <http://www.airquality.org/businesses/ceqa-land-use-planning/mitigation> (click on the current "Construction Mitigation Tool" spreadsheet under Step 1).

Moreover, the County's standard conditions of approval require Grading Plans for the proposed project to include the following notes:

- Prior to construction activity, a Dust Control Plan or Asbestos Dust Mitigation Plan shall be submitted to the Placer County Air Pollution Control District (APCD) when the project area to be disturbed is greater than one acre. The Dust Control Plan shall be submitted to the APCD a minimum of 21 days before construction activity



is scheduled to commence. The Dust Control Plan can be submitted online via the fill-in form: <http://www.placerair.org/dustcontrolrequirements/dustcontrolform>.

- Construction equipment exhaust emissions shall not exceed the APCD Rule 202 Visible Emissions limitations. Operators of vehicles and equipment found to exceed opacity limits are to be immediately notified by the APCD to cease operations, and the equipment must be repaired within 72 hours.
- Dry mechanical sweeping is prohibited. Watering of a construction site shall be carried out to mitigate visible emissions. (Based on APCD Rule 228 / Section 301).
- The contractor shall not discharge into the atmosphere volatile organic compounds caused by the use or manufacture of Cutback or Emulsified asphalts for paving, road construction or road maintenance unless such manufacture or use complies with the provisions of Rule 217 Cutback and Emulsified Asphalt Paving Materials.
- The contractor shall utilize existing power sources (e.g., power poles) or clean fuel (e.g., gasoline, biodiesel, natural gas) generators rather than temporary diesel power generators.
- The contractor shall minimize idling time to a maximum of five minutes for all diesel-powered equipment. (Placer County Code Chapter 10, Article 10.14).
- Idling of construction-related equipment and construction-related vehicles shall be minimized within 1,000 feet of any sensitive receptor (i.e., house, hospital, or school).
- The contractor shall suspend all grading operations when fugitive dust exceeds the APCD Rule 228 (Fugitive Dust) limitations. Fugitive dust is not to exceed 40 percent opacity, nor go beyond the property boundary at any time. Lime or other drying agents utilized to dry out wet grading areas shall not exceed APCD Rule 228 limitations. (Based on APCD Rule 228 / section 302 & 401.4)
- The prime contractor shall be responsible for keeping adjacent public thoroughfares clean by keeping dust, silt, mud, dirt and debris from being released or tracked offsite. Wet broom or other methods can be deployed as control and as approved by the individual jurisdiction. (Based on APCD Rule 228 / section 401.5)
- During construction activity, traffic speeds on all unpaved surfaces shall be limited to 15 miles per hour or less unless the road surface and surrounding area is sufficiently stabilized to prevent vehicles and equipment traveling more than 15 miles per hour from emitting dust or visible emissions from crossing the project boundary line. (Based on APCD Rule 228 / section 401.2)
- The contractor shall apply methods such as surface stabilization, the establishment of a vegetative cover, paving, (or use another method to control dust as approved by the individual jurisdiction) to minimize wind-driven dust.
- The contractor shall apply water or use methods to control dust impacts offsite. Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt from being released or tracked off-site. (Based on APCD Rule 228 / section 304)
- The contractor shall suspend all grading operations when wind speeds (including instantaneous gusts) are high enough to result in dust emissions crossing the boundary line, despite the application of dust mitigation measures. (Based on APCD Rule 228 / section 401.6)
- In order to minimize wind driven dust during construction, the prime contractor shall apply methods such as surface stabilization, establishment of a vegetative cover, paving (or use of another method to control dust as approved by Placer County). (Based on APCD Rule 228 / section 402)



- Any device or process that discharges 2 pounds per day or more of air contaminants into the atmosphere, as defined by Health and Safety Code Section 39013, may require an APCD permit. Developers/contractors should contact the APCD prior to construction and obtain any necessary permits prior to the issuance of a Building Permit. (APCD Rule 501)

As noted in Chapter 3, Project Description, of this EIR, the 400-foot segment of Bickford Ranch Road between the terminus of BRSP Phase 1 and the project site's southwest corner would be implemented either during Phase 2 of the BRSP or during construction of the proposed project, should the applicant secure all necessary approvals for the proposed project and choose to move ahead of BRSP Phase 2 infrastructure improvements. Construction of the 400-foot roadway segment has already been anticipated for development and analyzed in the approved BRSP EIR. Should the roadway extension occur as part of the proposed project, construction activities related to such would be required to comply with all applicable PCAPCD regulations listed above, as well as the following BRSP mitigation measures:

- Mitigation Measure A-A: Provide dust controls.
- Mitigation Measure A-B: Maintain construction equipment and vehicles.
- Mitigation Measure A-D: Require use of low-emission construction materials and equipment where feasible.
- Mitigation Measure A-N: Implement construction measures to reduce emissions.
  - a. The prime contractor shall submit to the County and PCAPCD a comprehensive inventory (e.g., make, model, year, emission rating) of all the heavy-duty off-road equipment (50 horsepower or greater) that will be used in aggregate of 40 or more hours for the construction project. If any new equipment is added after submission of the inventory, the prime contractor shall contact the County and PCAPCD prior to the new equipment being utilized. At least three business days prior to the use of subject heavy-duty off-road equipment, the project representative shall provide the County and Placer County APCD with the anticipated construction timeline including start date, name, and phone number of the property owner, project manager, and on-site foreman.
  - b. Prior to approval of Grading or Improvement Plans, whichever occurs first, the Applicant shall provide a written calculation to the PCAPCD for approval demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average of 20% of NOx and 45% of diesel particulate matter reduction as compared to CARB statewide fleet average emissions. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.
  - c. Include the following standard notes on the improvement plans and grading plans:
    1. During construction the contractor shall utilize existing power sources (e.g., power poles) or clean fuel (e.g., gasoline, biodiesel, natural gas) generators rather than temporary diesel power generators.



2. During construction, the contractor shall minimize idling time to a maximum of 5 minutes for all diesel-powered equipment.
  3. Signs shall be posted in the designated queuing areas of the construction site to limit idling of construction equipment to a maximum of 5 minutes.
  4. Idling of construction related equipment and construction related vehicles should not occur within 1,000 feet of any sensitive receptor.
  5. Schedule operations affecting traffic for off-peak hours whenever possible.
- d. An enforcement plan shall be established to evaluate on a weekly basis project-related on- and off-road heavy-duty vehicle engine emission opacities, using standards as defined in CCR, Title 13, Sections 2180-2194. An Environmental Coordinator, who is CARB-certified to perform Visible Emissions Evaluations, shall routinely evaluate project-related off-road and heavy-duty on-road equipment emissions for compliance with this requirement. Operators of vehicles and equipment found to exceed opacity limits will be notified, and the equipment must be repaired within 72 hours.
  - e. The PCAPCD Rules and Regulations shall be included as standard notes on grading and improvement plans.

### Conclusion

Because the proposed project's estimated unmitigated construction emissions would be below the applicable PCAPCD thresholds of significance, construction activities associated with development of the proposed project would not substantially contribute to the PCAPCD's nonattainment status for ozone or PM. Accordingly, construction of the proposed project would not conflict with or obstruct implementation of the applicable air quality plan, and a **less-than-significant** impact would occur associated with construction.

### Mitigation Measure(s)

*None required.*

## **5-2 Conflict with or obstruct implementation of the applicable air quality plan during project operation. Based on the analysis below, the impact is less than significant.**

As discussed above, due to the nonattainment designations of the area, the PCAPCD has developed plans to attain the State and federal standards for ozone and particulate matter. The currently applicable air quality plan is the 2013 Ozone Attainment Plan. Adopted PCAPCD rules and regulations, as well as the thresholds of significance, have been developed with the intent to ensure continued attainment of AAQS, or to work towards attainment of AAQS for which the area is currently designated nonattainment, consistent with the applicable air quality plan. Thus, if a project's operational emissions exceed the PCAPCD's mass emission thresholds, a project would be considered to conflict with or obstruct implementation of the PCAPCD's air quality planning efforts.

Emissions of ROG, NO<sub>x</sub>, and PM<sub>10</sub> would be generated during operations of the proposed project from both mobile and stationary sources. Emissions related to operation of the



proposed project would include sources such as architectural coatings, landscape maintenance equipment exhaust, and consumer products (e.g., deodorants, detergents, hair spray, cleaning products, spray paint, insecticides, floor finishes, polishes, etc.). However, the most significant source of emissions related to the proposed project would be from mobile sources. As discussed in the Method of Analysis section above, to capture the potential emissions related to mobile sources from the proposed project, the project-specific trip generation rates and VMT estimates prepared by Fehr & Peers was applied to the project modeling.

The maximum unmitigated operational emissions for the proposed project are presented in Table 5-9 below.

	<b>ROG</b>	<b>NO<sub>x</sub></b>	<b>PM<sub>10</sub></b>
Project Emissions	54.59	4.20	11.02
<b>PCAPCD Significance Threshold</b>	<b>55</b>	<b>55</b>	<b>82</b>
<b>Exceeds Threshold?</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>
<i>Source: CalEEMod, May 2021 (see Appendix D).</i>			

It should be noted that the operational emissions modeling for the proposed project assumed that the design of all proposed residences would include fireplaces, which could include woodfired or natural gas fireplaces (woodfired fireplaces would be subject to regulation under PCAPCD Rule 225, Wood Burning Appliances). The operation of fireplaces is the primary source of ROG emissions related to project operations.

As shown in the table, unmitigated operational emissions would be below the PCAPCD's thresholds of significance for ROG, NO<sub>x</sub>, and PM<sub>10</sub>. Accordingly, operations of the proposed project would not violate any AAQS or contribute substantially to an existing or projected air quality violation. Therefore, operations of the proposed project would not conflict with or obstruct implementation of the applicable air quality plan, and a **less-than-significant** impact would occur.

Mitigation Measure(s)

*None required.*

Despite the less-than-significant impact, in an effort to further reduce emissions, the County will include a Condition of Approval to prohibit the use of wood-burning appliances in all units.

**5-3 Expose sensitive receptors to substantial pollutant concentrations. Based on the analysis below, the impact is less than significant.**

The major pollutant concentrations of concern are localized CO emissions, TAC emissions, and criteria pollutant emissions, which are addressed below.



### Localized CO Emissions

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. Implementation of the proposed project would increase traffic volumes on streets near the project site; therefore, the project would be expected to increase local CO concentrations. Concentrations of CO approaching the AAQS are only expected where background levels are high, and traffic volumes and congestion levels are high. The statewide CO Protocol document identifies signalized intersections operating at LOS E or F, or projects that would result in the worsening of signalized intersections to LOS E or F, as having the potential to result in localized CO concentrations in excess of AAQS, as a result of large numbers of cars idling at stop lights.<sup>28</sup> In accordance with the statewide CO Protocol, the PCAPCD has established screening methodology for localized CO emissions, which are intended to provide a conservative indication of whether project-generated vehicle trips would result in the generation of localized CO emissions that would contribute to an exceedance of AAQS and potentially expose sensitive receptors to substantial CO concentrations. Per the PCAPCD's screening methodology, if the project would result in vehicle operations producing more than 550 lbs/day of CO emissions and if either of the following scenarios are true, the project could result in localized CO emissions that would violate CO standards:

- Degrade the peak hour LOS on one or more streets or at one or more intersections (both signalized and non-signalized) in the project vicinity from an acceptable LOS (i.e., LOS A, B, C, or D) to an unacceptable LOS (i.e., LOS E or F); or
- Substantially worsen an already existing unacceptable peak hour LOS on one or more streets or at one or more intersections in the project vicinity. "Substantially worsen" includes an increase in delay at an intersection by 10 seconds or more when project-generated traffic is included.<sup>29</sup>

According to the Air Quality analysis performed for the proposed project, operation of the project would result in maximum mobile source CO emissions of 72.24 lbs/day (see Appendix D). Consequently, CO emissions related to operation of the proposed project would be far below the 550 lbs/day screening threshold used by PCAPCD. Therefore, according to the PCAPCD's screening methodology for localized CO emissions, the proposed project would not be expected to generate localized CO emissions that would contribute to an exceedance of AAQS, and the proposed project would not expose sensitive receptors to substantial concentrations of localized CO.

### TAC Emissions

As stated above, if a project would introduce a new source of TACs, a detailed health risk assessment may be required. The PCAPCD considers an increase in cancer risk levels of more than 10 in one million persons or a non-cancer hazard index greater than 1.0 to be a significant impact related to TACs.

The BRSP Phase 1 residential development west of the project site would be considered sensitive receptors. The closest sensitive receptor to the project site would be the easternmost residences located approximately 1,000 feet from the western project site boundary. Thus, activities related to the construction and operation of the proposed project

<sup>28</sup> University of California, Davis. *Transportation Project-Level Carbon Monoxide Protocol*. December 1997.

<sup>29</sup> Placer County Air Pollution Control District. *CEQA Air Quality Handbook* [pg. 37]. November 21, 2017.



are considered to determine whether the proposed project would expose nearby sensitive receptors to substantial TAC emissions.

The CARB has identified DPM from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks from TACs are a function of both the concentration of emissions and the duration of exposure. Health-related risks associated with DPM in particular are primarily associated with long-term exposure and associated risk of contracting cancer.

Operational-related emissions of TACs are typically associated with stationary diesel engines or land uses that involve heavy truck traffic or idling. The proposed residences would not involve long-term or frequent operations of any stationary diesel engines and, as a result, operations of the proposed project are not anticipated to result in substantial emissions of TACs. However, construction-related activities have the potential to generate concentrations of TACs, specifically DPM, from on-road haul trucks and off-road equipment exhaust emissions.

The construction period would be temporary and would occur over a relatively short duration in comparison to the operational lifetime of the proposed project. While methodologies for conducting health risk assessments are associated with long-term exposure periods (e.g., over a 30-year period or longer), construction activities associated with the proposed project were estimated to occur over an approximately two-year period. Only portions of the site would be disturbed at a time throughout the construction period, with operation of construction equipment occurring intermittently throughout the course of a day rather than continuously at any one location on the project site. In addition, all construction equipment and operation thereof would be regulated per the In-Use Off-Road Diesel Vehicle Regulation. The In-Use Off-Road Diesel Vehicle Regulation includes emissions reducing requirements such as limitations on vehicle idling, disclosure, reporting, and labeling requirements for existing vehicles, as well as standards relating to fleet average emissions and the use of Best Available Control Technologies. As discussed above, through standard conditions of approval, Placer County requires off-road equipment used within the County to achieve lower than State-average emissions of NO<sub>x</sub> and PM. Thus, on-site emissions of PM would be reduced, which would result in a proportional reduction in DPM emissions and exposure of nearby residences to DPM. Project construction would also be required to comply with all applicable PCAPCD rules and regulations, including Rule 501 related to General Permit Requirements. In addition, the prevailing wind direction in the project area is most often from the south.<sup>30</sup> As a result, construction-related emissions would primarily flow towards the north, away from the nearest sensitive receptors.

Considering the intermittent nature of construction equipment operating within an influential distance to the nearest sensitive receptors, the duration of construction activities in comparison to the operational lifetime of the project, the typical long-term exposure periods associated with conducting health risk assessments, and compliance with

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<sup>30</sup> Weather Spark. *Average Weather in Lincoln California, United States*. Available at: <https://weatherspark.com/y/1138/Average-Weather-in-Lincoln-California-United-States-Year-Round#:~:text=The%20predominant%20average%20hourly%20wind,of%2074%25%20on%20August%202011..> Accessed May 2021.



regulations, the likelihood that any one nearby sensitive receptor would be exposed to high concentrations of DPM for any extended period of time would be low.

As discussed above, the proposed project's construction-related emissions would be below the applicable mass emissions thresholds of significance for PM<sub>10</sub>, which includes DPM and fugitive dust related to construction. The PCAPCD's Handbook advises that if construction-related emissions have been quantified and are below the thresholds of significance, the project would result in a less-than-significant impact.<sup>31</sup> Considering that PM<sub>10</sub> emissions, which include emissions of DPM, would be below the PCAPCD's thresholds of significance, construction of the proposed project would not be expected to generate substantial DPM emissions such that an increase in cancer risk levels of more than 10 in one million persons or a non-cancer hazard index greater than 1.0 would occur. Furthermore, the nearest sensitive receptors would be located approximately 1,000 feet to the west, and the concentration of DPM at the sensitive receptors would be lower as compared to the concentration of DPM at the project site. Therefore, the proposed project would not expose sensitive receptors to substantial concentrations of DPM during construction.

### *Naturally Occurring Asbestos*

According to the *Special Report 190: Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County, California*, prepared by the Department of Conservation, the project site is located within an area categorized as least likely to contain NOA, because faults and serpentinite outcroppings are not known to be in the project area.<sup>32</sup> Consequently, NOA is not anticipated to be present on the project site.

### Criteria Pollutants

As noted in Table 5-1, exposure to criteria air pollutants can result in adverse health effects. The AAQS presented in Table 5-2 are health-based standards designed to ensure safe levels of criteria pollutants that avoid specific adverse health effects. Because the SVAB is designated as nonattainment for State and federal eight-hour ozone and State PM<sub>10</sub> standards, the PCAPCD, along with other air districts in the SVAB region, has adopted federal and State attainment plans to demonstrate progress towards attainment of the AAQS. Full implementation of the attainment plans would ensure that the AAQS are attained and sensitive receptors within the SVAB are not exposed to excess concentrations of criteria pollutants. The PCAPCD's thresholds of significance were established with consideration given to the health-based air quality standards established by the AAQS, and are designed to aid the district in implementing the applicable attainment plans to achieve attainment of the AAQS.<sup>33</sup> Thus, if a project's criteria pollutant emissions exceed the PCAPCD's mass emission thresholds of significance, a project would be considered to conflict with or obstruct implementation of the PCAPCD's air quality planning efforts, thereby delaying attainment of the AAQS. Because the AAQSs are representative of safe levels that avoid specific adverse health effects, a project's hinderance of attainment of the AAQS could be considered to contribute towards regional health effects associated with the existing nonattainment status of ozone and PM<sub>10</sub> standards.

<sup>31</sup> Placer County Air Pollution Control District. *CEQA Air Quality Handbook* [pg. 31 and 32]. November 21, 2017.

<sup>32</sup> Department of Conservation, California Geological Survey. *Special Report 190: Relative Likelihood for the Presence of Naturally Occurring Asbestos in Placer County, California*. Published 2006.

<sup>33</sup> Placer County Air Pollution Control District. *CEQA Air Quality Handbook* [pg. 20]. November 21, 2017.



However, as discussed in Impacts 5-1 and 5-2, the proposed project would not result in exceedance of the PCAPCD's thresholds of significance. Consequently, implementation of the proposed project would not conflict with the PCAPCD's adopted attainment plans nor would the proposed project inhibit attainment of regional AAQS. Therefore, implementation of the proposed project would not contribute towards regional health effects associated with the existing nonattainment status of ozone and PM<sub>10</sub> standards.

### Conclusion

Based on the above analysis, the proposed residential land uses would not be anticipated to result in the production of substantial concentrations of TACs, including DPM, localized CO, or criteria pollutants. In addition, the likelihood of NOA being present on the project site is low. Therefore, the proposed project would not result in the exposure of sensitive receptors to substantial pollutant concentrations, and a **less-than-significant** impact would result.

### Mitigation Measure(s)

*None required.*

## **5-4 Conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Based on the analysis below, the impact is less than significant.**

The PCSP, adopted by the Placer County Board of Supervisors on January 28, 2020, includes goals and policies for energy efficiency.<sup>34</sup> As a result, the PCSP is considered the local plan for renewable energy and efficiency. The PCSP contains community-wide and municipal energy efficiency and GHG mitigation strategies that can be applied to discretionary projects, as feasible, when the applicable project-level thresholds are exceeded. For example, the following strategies from the PCSP represent measures that could be applicable to residential developments such as the proposed project.

- **Strategy E-1:** Facilitate a transition to electricity as the primary energy source for residential, mixed-use, commercial, and office buildings;
- **Strategy E-2:** Provide increased awareness and resources for homeowners to replace old appliances with energy-efficient models.
- **Strategy E-4:** Encourage new residential, office, and commercial development, as mitigation for discretionary projects exceeding applicable CEQA GHG thresholds, to implement CALGreen Tier 1 standards and accelerate Zero Net Energy (ZNE) in new construction; and
- **Strategy WW-2:** Encourage new development projects, as mitigation for discretionary projects exceeding applicable GHG thresholds, to exceed minimum State water efficiency requirements for new water fixtures.

Under the PCSP, the County uses the PCAPCD-recommended GHG threshold of 1,100 MTCO<sub>2e</sub> per year to determine whether PCSP emission reduction measures are required. Because the proposed project's operational GHG emissions would be below the applicable GHG thresholds (see Table 5-11), implementation of the GHG reduction

<sup>34</sup> Placer County Community Development Resource Agency. *Placer County Sustainability Plan: A Greenhouse Gas Emission Reduction Plan and Adaptation Strategy*. January 28, 2020.



measures included in the PCSP is not required. As a result, the project would not conflict with or obstruct a local plan for renewable energy or energy efficiency, and the impact would be **less than significant**.

Mitigation Measure(s)

*None required.*

**Cumulative Impacts and Mitigation Measures**

As defined in Section 15355 of the CEQA Guidelines, “cumulative impacts” refers to two or more individual effects which, when considered together, are considerable, compound, or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects.

A project’s emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects. The geographic context for the cumulative air quality analysis includes Placer County and surrounding areas within the portion of the SVAB that is designated nonattainment for ozone and PM<sub>10</sub>.

As mentioned above, global climate change is, by nature, a cumulative impact. Emissions of GHG contribute, on a cumulative basis, to the significant adverse environmental impacts of global climate change (e.g., sea level rise, impacts to water supply and water quality, public health impacts, impacts to ecosystems, impacts to agriculture, and other environmental impacts). A single project could not generate enough GHG emissions to contribute noticeably to a change in the global average temperature. However, the combination of GHG emissions from a project in combination with other past, present, and future projects could contribute substantially to the world-wide phenomenon of global climate change and the associated environmental impacts. Although the geographical context for global climate change is the Earth, for analysis purposes under CEQA, and due to the regulatory context pertaining to GHG emissions and global climate change applicable to the proposed project, the geographical context for global climate change in this EIR is limited to the State of California.

**5-5 Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors). Based on the analysis below, the project’s incremental contribution to this significant cumulative impact is *less than cumulatively considerable*.**

The proposed project is within a nonattainment area for ozone and PM<sub>10</sub>. By nature, air pollution is largely a cumulative impact. The population growth and vehicle usage within the nonattainment area from the proposed project, in combination with other past, present, and reasonably foreseeable projects within Placer County and surrounding areas, contributes to the region’s adverse air quality impacts on a cumulative basis, and could either delay attainment of AAQS or require the adoption of additional controls on existing



and future air pollution sources to offset emission increases. Thus, the project's emissions of criteria air pollutants would contribute to cumulative regional air quality effects.

As noted in the Standards of Significance section above, the PCAPCD directs lead agencies to use the region's existing attainment plans as a basis for analysis of cumulative emissions. A project's interference with such plans may be determined through the use of the PCAPCD's recommended thresholds of significance for ozone precursors and PM<sub>10</sub>. The PCAPCD's recommended cumulative thresholds are identical to the operational thresholds, both of which are presented in Table 5-6. Accordingly, if the proposed project would result in an increase of ROG, NO<sub>x</sub> or PM<sub>10</sub> in excess of PCAPCD's operational phase cumulative-level emissions threshold, which are identical to PCAPCD's project-level operational emissions thresholds, the project could potentially result in a significant incremental contribution towards cumulative air quality impacts.

As discussed under Impact 5-2, and demonstrated in Table 5-9, operational criteria pollutant emissions associated with the proposed project would be below the applicable PCAPCD thresholds of significance.

Therefore, implementation of the proposed project would not result in a significant incremental contribution to a cumulative violation of any air quality standards, contribute substantially to an existing or projected air quality violation, or conflict with and/or obstruct implementation of the PCAPCD's air quality planning efforts. As such, the proposed project's incremental contribution to regional air quality impacts would be ***less than cumulatively considerable***.

#### Mitigation Measure(s)

*None required.*

### **5-6 Generation of GHG emissions that may have a significant impact on the environment or conflict with an applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs. Based on the analysis below, the project's incremental contribution to this significant cumulative impact is ***less than cumulatively considerable***.**

Buildout of the proposed project would contribute to increases of GHG emissions that are associated with global climate change during construction and operation.

#### Construction GHG Emissions

The estimated unmitigated maximum construction-related GHG emissions from the proposed project are presented in Table 5-10. As shown in the table, the maximum annual GHG emissions related to construction of the proposed project are anticipated to occur in 2025. However, even the maximum construction-related GHG emissions would be well below the PCAPCD's bright-line threshold of 10,000 MTCO<sub>2</sub>e/yr.

#### Long-Term Operational GHG Emissions

The modeling assumptions for the GHG emissions related to operations of the proposed project are discussed in the Method of Analysis section above. The estimated unmitigated



operational GHG emissions at full buildout (2026) are presented in Table 5-11. As shown in the table, the proposed project would result in operational GHG emissions below the 1,100 MTCO<sub>2</sub>e/yr operational threshold of significance. Accordingly, further evaluation in comparison with the efficiency thresholds presented in Table 5-7 is not necessary or required.

<b>Year</b>	<b>GHG Emissions (MTCO<sub>2</sub>e/yr)</b>	<b>Threshold of Significance (MTCO<sub>2</sub>e/yr)</b>
2024	191.08	10,000
2025	1,447.78	10,000
2026	670.19	10,000

*Source: CalEEMod, May 2021 (see Appendix D).*

<b>Emission Source</b>	<b>GHG Emissions</b>
Area	51.93
Energy	44.19
Mobile	370.84
Solid Waste	17.56
Water	3.79
<b>TOTAL ANNUAL GHG EMISSIONS</b>	<b>488.31</b>
<b>PCAPCD Screening Level Threshold</b>	<b>1,100</b>

Note: Rounding may result in small differences in summation.

*Source: CalEEMod, May 2021 (see Appendix D).*

### **Consistency with Placer County Sustainability Plan**

The CARB encourages local governments to adopt a reduction goal for municipal operations emissions and move toward establishing similar goals for community emissions that parallel the State’s commitment to reducing GHG emissions. As noted previously, Placer County adopted the PCSP in January, 2020.<sup>35</sup> The PCSP includes an inventory of baseline emissions from the year 2005 and forecasted emissions in 2020, 2030, and 2050. In addition, the PCSP establishes a target of reducing the County’s GHG emissions to 15 percent below 2005 levels by 2020 and achieving the State-wide per capita efficiency target of six MTCO<sub>2</sub>e per person by 2030. The GHG reductions presented within the PCSP are designed to achieve the State’s adopted AB 32 and SB 32 reduction targets. The PCSP would not be applicable to projects that have been previously analyzed under a certified EIR, which are consistent with such analysis, and addresses the most recent GHG regulatory requirements.

As noted above, because the proposed project’s operational GHG emissions would be below the applicable thresholds (see Table 5-11), implementation of the GHG reduction measures included in the PCSP is not required. Therefore, the proposed project would not conflict with implementation of the PCSP.

<sup>35</sup> Placer County Community Development Resource Agency. *Placer County Sustainability Plan: A Greenhouse Gas Emission Reduction Plan and Adaptation Strategy*. January 28, 2020.



Conclusion

Therefore, the proposed project would not be considered to generate GHG emissions, either directly or indirectly, that would have a significant impact on the environment, or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Consequently, the project would not result in a cumulatively considerable incremental contribution to impacts related to GHG emissions or climate change and the project's impact would be ***less than cumulatively considerable***.

Mitigation Measure(s)

*None required.*

