

4.2 AIR QUALITY, GREENHOUSE GAS EMISSIONS, AND ENERGY

4.2.1 INTRODUCTION

Pursuant to CEQA Guidelines Section 15162, the Air Quality, Greenhouse Gas Emissions, and Energy chapter of this Subsequent EIR (SEIR) assesses whether the proposed changes to the Wildhorse Ranch Project would result in a new significant impact not previously identified within the adopted 2009 Wildhorse Ranch Project EIR (2009 EIR), or a substantial increase in the severity of a significant impact previously identified in the 2009 EIR related to local and regional air quality emissions, greenhouse gas (GHG) emissions and climate change, and energy.

The chapter is primarily based on information included in the Davis General Plan¹ and associated EIR,² the Yolo-Solano Air Quality Management District (YSAQMD) Handbook for Assessing and Mitigating Air Quality Impacts,³ the City of Davis Climate Action and Adaptation Plan (CAAP),⁴ and the 2009 EIR, as well as a technical analysis performed by Raney Planning and Management, Inc. (see Appendix C of this SEIR).

4.2.2 EXISTING ENVIRONMENTAL SETTING

With respect to air quality, GHG emissions, and energy, several circumstances have changed since the certification of the 2009 EIR. As such, the following information provides an updated overview of the existing environmental setting in relation to air quality within the proposed project area. Current 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, updated information related to climate change and GHGs, as well as energy, is provided.

Air Basin Characteristics

The City of Davis is located in Yolo County, within the Yolo-Solano portion of the Sacramento Valley Air Basin (SVAB), which is under the jurisdiction of the YSAQMD. Air quality in the SVAB is largely the result of the following factors: emissions, geography, and meteorology (wind, atmospheric stability, and sunlight). The Sacramento Valley is often described as a bowl-shaped valley, with the SVAB being bounded by the North Coast Ranges on the west, the northern Sierra Nevada Mountains on the east, and the intervening terrain being flat.

The Sacramento Valley has a Mediterranean climate, characterized by hot, dry summers and mild, rainy winters. During the year, the temperature may range from 20 to 115 degrees Fahrenheit, with summer highs usually in the 90-degree Fahrenheit range and winter lows occasionally below freezing. Average annual rainfall is approximately 20 inches, with snowfall

¹ City of Davis. *Davis General Plan*. Adopted May 2001. Amended through January 2007.

² City of Davis. *Program EIR for the City of Davis General Plan Update and Project EIR for Establishment of a New Junior High School*. January 2000.

³ Yolo-Solano Air Quality Management District. *Handbook for Assessing and Mitigating Air Quality Impacts*. July 11, 2007.

⁴ City of Davis. *Climate Action and Adaptation Plan*. April 18, 2023.



being very rare. The winds in the area are moderate in strength and vary from moist, clean breezes from the south to dry land flows from the north.⁵

The mountains surrounding the Sacramento Valley create a barrier to airflow, which can trap air pollutants in the valley when meteorological conditions are right and a temperature inversion exists. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells lie over the valley. The lack of surface wind during autumn and early winter and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in the air. The surface concentrations of pollutants are highest when these conditions are combined with smoke from agricultural burning, which is regulated through YSAQMD permits, or when temperature inversions trap cool air, fog, and pollutants near the ground.

The ozone season (May through October) in the Sacramento Valley is characterized by stagnant morning air or light winds, with the Delta sea breeze arriving in the afternoon out of the southwest. Usually the evening breeze transports the airborne pollutants to the north out of the Sacramento Valley. However, during approximately half of the days from July to September, a phenomenon called the “Schultz Eddy” prevents the transport from occurring. Instead of allowing for the prevailing wind patterns to move north, carrying the pollutants out of the valley, the Schultz Eddy causes the wind pattern and pollutants to circle back southward. The Schultz Eddy effect exacerbates the pollution levels in the area and increases the likelihood of violating the federal and State air quality standards.

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 4.2-1 identifies the major pollutants, characteristics, health effects and typical sources. The national and California AAQS (NAAQS and CAAQS, respectively) are summarized in Table 4.2-2. The NAAQS and CAAQS were developed independently with differing purposes and methods. As a result, the national 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_x) 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

⁵ Yolo-Solano Air Quality Management District. *Handbook for Assessing and Mitigating Air Quality Impacts*. July 11, 2007.



ozone precursors is mobile sources, including cars, trucks, buses, construction equipment, and agricultural equipment.

**Table 4.2-1
 Summary of Criteria Pollutants**

Pollutant	Characteristics	Health Effects	Major Sources
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"> • Eye irritation • Wheezing, chest pain, dry throat, headache, or nausea • Aggravated respiratory disease such as emphysema, bronchitis, and asthma 	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"> • Impairment of oxygen transport in the bloodstream • Impaired vision, reduced alertness, chest pain, and headaches • Can be fatal in the case of very high concentrations 	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"> • Lung irritation and damage • Increased risk of acute and chronic respiratory disease 	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"> • Aggravation of chronic obstruction lung disease • Increased risk of acute and chronic respiratory disease 	Diesel vehicle exhaust, oil-powered power plants, and industrial processes.
Particulate Matter (PM ₁₀ and PM _{2.5})	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"> • Aggravation of chronic respiratory disease • Heart and lung disease • Coughing • Bronchitis • Chronic respiratory disease in children • Irregular heartbeat • Nonfatal heart attacks 	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"> • Loss of appetite, weakness, apathy, and miscarriage • Lesions of the neuromuscular system, circulatory system, brain, and gastrointestinal tract 	Industrial sources and combustion of leaded aviation gasoline.
<p>Sources:</p> <ul style="list-style-type: none"> • CARB. California Ambient Air Quality Standards (CAAQS). Available at: https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards. Accessed March 2024. • Sacramento Metropolitan, El Dorado, Feather River, Placer, and Yolo-Solano Air Districts, Spare the Air website. Air Quality Information for the Sacramento Region. Available at: sparetheair.com. Accessed March 2024. • CARB. Glossary of Air Pollution Terms. Available at: https://ww2.arb.ca.gov/glossary. Accessed March 2024. 			



**Table 4.2-2
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 ₁₀)	Annual Mean	20 ug/m ³	-	Same as primary
	24 Hour	50 ug/m ³	150 ug/m ³	
Fine Particulate Matter (PM _{2.5})	Annual Mean	12 ug/m ³	12 ug/m ³	15 ug/m ³
	24 Hour	-	35 ug/m ³	Same as primary
Lead	30 Day Average	1.5 ug/m ³	-	-
	Calendar Quarter	-	1.5 ug/m ³	Same as primary
Sulfates	24 Hour	25 ug/m ³	-	-
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
µg/m³ = 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: CARB. Ambient Air Quality Standards. May 4, 2016. Available at: <https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf>. Accessed March 2024.

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.

Reactive Organic Gas

ROG refers to several reactive chemical gases composed of hydrocarbon compounds typically found in paints and solvents that contribute 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_x are a family of gaseous nitrogen compounds and are precursors to the formation of ozone and particulate matter. The major component of NO_x, nitrogen dioxide (NO₂), is a reddish-brown gas that discolors the air and is toxic at high concentrations. NO_x 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_x. NO_x reacts with ROG to form smog, which could result in adverse impacts to human health, damage the environment, and cause poor visibility. Additionally, NO_x emissions are a major component of acid rain. Health effects related to NO_x include lung irritation and lung damage and can cause increased risk of acute and chronic respiratory disease.

Nitrogen Dioxide

A particular oxide of nitrogen that is of concern to human health is NO₂. NO₂ is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO₂ in the atmosphere is the oxidation of the primary air pollutant nitric oxide (NO), which is a colorless, odorless gas.

A large body of health science literature indicates that exposure to NO₂ can induce adverse health effects. The strongest health evidence, and the health basis for the AAQS for NO₂, results from controlled human exposure studies that show that NO₂ exposure can intensify responses to allergens in allergic asthmatics. In addition, several epidemiological studies have demonstrated associations between NO₂ exposure and premature death, cardiopulmonary effects, decreased lung function growth in children, respiratory symptoms, emergency room visits for asthma, and intensified allergic responses. Infants and children are particularly at risk because they have disproportionately higher exposure to NO₂ than adults due to their greater breathing rate for their body weight and their typically greater outdoor exposure duration. Several studies have shown that long-term NO₂ exposure during childhood, the period of rapid lung growth, can lead to smaller lungs at maturity in children with higher compared to lower levels of exposure. In addition, children with asthma have a greater degree of airway responsiveness compared with adult asthmatics. In adults, the greatest risk is to people who have chronic respiratory diseases, such as asthma and chronic obstructive pulmonary 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 (SO₂) 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. SO₂ is also emitted from several industrial processes, such as petroleum refining and metal processing. Similar to airborne NO_x, suspended sulfur oxide particles contribute to poor visibility. The sulfur oxide particles are also a component of PM₁₀.



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 (PM₁₀) 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_{2.5-10})," which are found near roadways and dusty industries, are between 2.5 and 10 micrometers in diameter. PM_{2.5-10} is deposited in the thoracic region of the lungs.
- "Fine particles (PM_{2.5})," which are found in smoke and haze, are 2.5 micrometers in diameter and smaller. PM_{2.5} 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_{2.5}, 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_{2.5}.

PM₁₀, PM_{2.5}, 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_{2.5} and UFP are emitted by combustion sources like vehicles, power generation, industrial processes, and wood burning, while PM₁₀ 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 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 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 AAQS 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 SO₂ during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO₂ 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 cardio-pulmonary 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 (H₂S) 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 (C₂H₃Cl, 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 YSAQMD 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 ROG and NO_x. 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.⁶

More than 90 percent of DPM is less than one micrometer in diameter, and, thus, DPM is a subset of PM_{2.5}. As a California statewide average, DPM comprises about eight percent of PM_{2.5} 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 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_{2.5}) and UFPs. 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.⁷ The penetration capability of UFPs may contribute to adverse health effects related to heart, lung, and other organ health.⁸ 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_{2.5}, estimations of either concentrations or emissions of PM_{2.5} 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

⁶ California Air Resources Board. *Reducing Toxic Air Pollutants in California's Communities*. February 6, 2002.

⁷ Health Effects Institute. *Understanding the Health Effects of Ambient Ultrafine Particles*. January 2013.

⁸ South Coast Air Quality Management District. *Final 2012 Air Quality Management Plan*. December 2012.



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.

According to mapping prepared by the California Geological Survey, Yolo County is not in an area likely to contain NOA.⁹ In addition, the project site is located in a developed area of the City and currently contains some existing development. For the aforementioned reasons, NOA is not expected to be present at the project site.

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. Areas not meeting the NAAQS presented in Table 4.2-2, above, are designated by the USEPA as nonattainment. Further classifications of nonattainment areas are based on the severity of the nonattainment problem, with marginal, moderate, serious, severe, and extreme nonattainment classifications for ozone. Nonattainment classifications for PM range from marginal to serious. Because of the differences between the national and State standards, the designation of nonattainment areas is different under the federal and State legislation. The FCAA requires areas violating the NAAQS to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The SIP contains the strategies and control measures for states to use to attain the NAAQS. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, rules, and regulations of air basins as reported by the agencies with jurisdiction over them. The USEPA reviews SIPs to determine if they conform to the mandates of the FCAA amendments and would achieve air quality goals when implemented.

The CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the CCAA. The CCAA classifies ozone nonattainment areas as moderate, serious, severe, and extreme based on severity of violations of CAAQS. The CCAA requires local air pollution control districts with air quality that is in violation of CAAQS to prepare air quality attainment plans that demonstrate district-wide emission

⁹ California Department of Conservation, Division of Mines and Geology. *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos*. August 2000.



reductions of five percent per year averaged over consecutive three-year periods, unless an approved alternative measure of progress is developed.

Table 4.2-3 below presents the current attainment status of the jurisdictional area of the YSAQMD, including Yolo County. As shown in the table, Yolo County is in an area designated as attainment for all State and federal AAQS, with the exception of ozone, PM₁₀, and PM_{2.5}. At the federal level, the area is designated as severe nonattainment for the 8-hour ozone standard, nonattainment for the 24-hour PM_{2.5} standard, and attainment or unclassified for all other criteria pollutants. At the State level, the area is designated as a nonattainment area for the 1-hour ozone standard, nonattainment for the 8-hour ozone standard, nonattainment for the PM₁₀ and PM_{2.5} standards, and attainment or unclassified for all other State standards. Although the 1-hour federal ozone standard has been revoked, on October 18, 2012, the USEPA officially determined that the Sacramento Federal Nonattainment Area (SFNA), which includes Sacramento and Yolo counties, Placer and El Dorado counties (except Lake Tahoe Basin portions), Solano County (eastern portion), and Sutter County (southern portion), attained the revoked 1-hour ozone NAAQS. The determination became effective November 19, 2012.

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone – 1-Hour	Revoked in 2005	Nonattainment
Ozone – 8-Hour	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
PM ₁₀ – 24-Hour	Unclassified	Nonattainment
PM ₁₀ – Annual	--	Nonattainment
PM _{2.5} – 24-Hour	Nonattainment	--
PM _{2.5} – Annual	Unclassified	Attainment
Lead	Attainment	Attainment
Sulfates	No Federal Standard	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Unclassified

Source: YSAQMD. Attainment Status. Available at: <https://www.ysaqmd.org/plans-data/attainment/>. Accessed March 2024.

In compliance with the FCAA and CCAA, due to the nonattainment designations, the YSAQMD, 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 PM. 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 discussion of this section.

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 Davis-UCD Campus station, located along Campbell Road between Hutchinson Drive and Garrod Road in Davis, approximately 2.75 miles from the project site. The Davis-UCD Campus station does not have data available for PM_{2.5} or PM₁₀; thus, the nearest station with PM_{2.5} and PM₁₀ data was used, which was the Woodland-Gibson Road station located at 41929 Gibson Road in Woodland, approximately seven miles northwest of the project site. Table 4.2-4 presents the number of days that the NAAQS and CAAQS were exceeded for the three-year period from 2020 to 2022.

Table 4.2-4 Air Quality Data Summary (2020-2022)				
Pollutant	Standard	Days Standard Was Exceeded		
		2020	2021	2022
1-Hour Ozone	State	0	0	0
	Federal	0	0	0
8-Hour Ozone	State	0	2	1
	Federal	0	1	0
24-Hour PM _{2.5}	Federal	4	0	0
24-Hour PM ₁₀	State	11	4	2
	Federal	1	0	0
1-Hour Nitrogen Dioxide	State	0	0	0
	Federal	0	0	0
<i>Source: CARB. Aerometric Data Analysis and Management (iADAM) System. Available at http://www.arb.ca.gov/adam/welcome.html. Accessed March 2024.</i>				

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 is 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.

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. In the vicinity of the project site, sensitive land uses include residential uses adjacent to the site's northern and western boundaries, as well as residential uses to the south, across East Covell Boulevard. The nearest residence is located approximately 25 feet from the project site's western 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 (CO₂), methane (CH₄), nitrous oxide (N₂O), 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 CO₂, with the next largest components being CH₄ and N₂O. A wide variety of human activities result in the emission of CO₂. Some of the largest sources of CO₂ include the burning of fossil fuels for transportation and electricity, industrial processes including fertilizer production, agricultural processing, and cement production. The primary sources of CH₄ 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 N₂O 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 transportation-related activities account for the majority of U.S. emissions. Transportation is the largest single-source of GHG emissions, and electricity generation is the second largest source, followed by industrial activities. The agricultural, commercial, and residential sectors account for the remainder of GHG emission sources.¹⁰

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 CO₂ 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.

¹⁰ U.S. Environmental Protection Agency. *Sources of Greenhouse Gas Emissions*. Available at: <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>. Accessed March 2024.



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 GWP 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 CO₂. GWP is based on a number of factors, including the heat-absorbing ability of each gas relative to that of CO₂, as well as the decay rate of each gas relative to that of CO₂. 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 CO₂, 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 CO₂, as shown in Table 4.2-5.

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

¹ For a given amount of CO₂ 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 CO₂. The atmospheric lifetimes of such GHGs are estimated by the USEPA to vary from 50 to 200 years for CO₂, to 50,000 years for CF₄. 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 CO₂ equivalents (MTCO₂e), which is calculated based on the GWP for each pollutant.

Effects of Global Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The Intergovernmental Panel on Climate Change’s (IPCC) *Climate Change 2021: The Physical Science Basis* report, indicated that warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia.¹¹

¹¹ Intergovernmental Panel on Climate Change. *Climate Change 2021: The Physical Science Basis Summary for Policymakers*. Available at: https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf. Accessed March 2024.



Signs that global climate change has occurred include:

- Warming of the atmosphere and ocean;
- Diminished amounts of snow and ice;
- Rising sea levels; and
- Ocean acidification.

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. The Office of Environmental Health Hazard Assessment (OEHHA) identified various indicators of climate change in California, which are scientifically based measurements that track trends in various aspects of climate change. Many indicators reveal discernable evidence that climate change is occurring in California and is having significant, measurable impacts in the State. Changes in the State's climate have been observed, including:

- An increase in annual average air temperature with record warmth in recent years;
- More frequent extreme heat events;
- More extreme drought;
- A decline in winter chill; and
- An increase in variability of statewide precipitation.

Warming temperatures and changing precipitation patterns have altered California's physical systems—the ocean, lakes, rivers and snowpack—upon which the State depends. Winter snowpack and spring snowmelt runoff from the Sierra Nevada and southern Cascade Mountains provide approximately one-third of the State's annual water supply. Impacts of climate on physical systems have been observed, such as high variability of snow-water content (i.e., amount of water stored in snowpack), decrease in snowmelt runoff, glacier change (loss in area), rise in sea levels, increase in average lake water temperature and coastal ocean temperature, and a decrease in dissolved oxygen in coastal waters. Impacts of climate change on biological systems, including humans, wildlife, and vegetation, have also been observed, including climate change impacts on terrestrial, marine, and freshwater ecosystems. However, it should be noted that the effects of climate change are not fully understood. For example, due to a series of atmospheric rivers that occurred throughout the 2022-2023 winter season, California saw the most snow the State has seen since the record was set in the 1982-1983 winter season. The California Department of Water Resources (DWR) has noted that the snowpack in the Sierra was 205 percent of the average in February 2023,¹² 190 percent of the average for March 2023,¹³ 237 percent of the average for April 2023,¹⁴ and 254 percent of the average for May of 2023.¹⁵

¹² California Department of Water Resources. *Second Snow Survey Reflects Boost from Atmospheric Rivers*. Available at: <https://water.ca.gov/News/News-Releases/2023/Feb-23/Second-Snow-Survey-Reflects-Boost-from-Atmospheric-Rivers>. Accessed March 2024.

¹³ California Department of Water Resources. *California's Snowpack Shows Huge Gains from Recent Storms*. Available at: <https://water.ca.gov/News/News-Releases/2023/March-23/March-2023-Snow-Survey>. Accessed March 2024.

¹⁴ California Department of Water Resources. *California's Snowpack is Now One of the Largest Ever, Bringing Drought Relief, Flooding Concerns*. Available at: <https://water.ca.gov/News/News-Releases/2023/April-23/Snow-Survey-April-2023>. Accessed March 2024.

¹⁵ California Department of Water Resources. *DWR Conducts May 1 Snow Survey to Continue to Collect Data on Spring Runoff*. Available at: <https://water.ca.gov/News/News-Releases/2023/May-2023/May-2023-Snow-Survey>. Accessed March 2024.



Nonetheless, according to the Climate Change Vulnerability Assessment conducted as part of the City's CAAP, like much of California, the City is already experiencing impacts from extreme heat events, flooding and extreme precipitation, drought and poor air quality caused by wildfire smoke. The Climate Change Vulnerability Assessment identified how such impacts are likely to change through mid-century and end-of-century timeframes. Specifically, projected changes include an increase in the number of extreme heat days, increased wildfire frequency and intensity, more intense precipitation events, and more frequent and/or prolonged droughts.¹⁶

Energy Use in California

California is one of the highest energy demanding states within the nation. According to the U.S. Department of Energy, the State consumes approximately 303,300 gigawatt-hours (GWh) of electricity per year.¹⁷ Activities such as heating and cooling structures, lighting, the movement of goods, agricultural production, and other facets of daily life consume a variety of energy sources. However, despite California's high rate of energy use, the State has one of the lowest per capita energy consumption levels in the U.S.

In 2022, California was the fourth-largest electricity producer in the nation. Energy within the State is provided primarily to consumers through a mix of sources including natural gas, hydroelectric, non-hydroelectric renewable sources, nuclear, coal, and petroleum. California is the nation's top producer of electricity from solar, geothermal, and biomass energy. Renewable resources, including hydroelectric power and small-scale (less than 1-megawatt [MW]), customer-sited solar photovoltaic (PV) systems, accounted for 49 percent of California's in-state electricity generation; natural gas-fired power plants fueled another 42 percent of the State's energy generation; and nuclear power supplied almost all the rest.

Figure 4.2-1 presents the sources that are used to produce energy in the State. As presented therein, energy is mostly generated from natural gas combustion, followed by non-hydroelectric renewables (such as wind and solar) and hydroelectric. Figure 4.2-2 presents energy consumption within California for the most recent year for which data is available (2021). As shown in the figure, transportation-related activity consumes the largest single share of energy within the State. The second largest consumer is the industrial sector.

Of the total electricity supplied to the State in the year 2022, Yolo County consumed approximately 1,797 GWh,¹⁸ which constitutes approximately 0.6 percent of the total energy consumed annually within the State.

Energy Consumption at the Project Site

Historically, electricity and natural gas has been supplied to the City of Davis by PG&E. However, on October 25, 2016, the Davis City Council adopted Resolution Number 16-153, Series 2016, which approved the Joint Exercise of Powers Agreement with Yolo County to form the Valley Clean Energy Alliance, now referred to as Valley Clean Energy (VCE). The resolution adopted by the City, along with similar resolutions adopted by the City of Woodland and Yolo County, led to the formation of the VCE Joint Powers Authority.

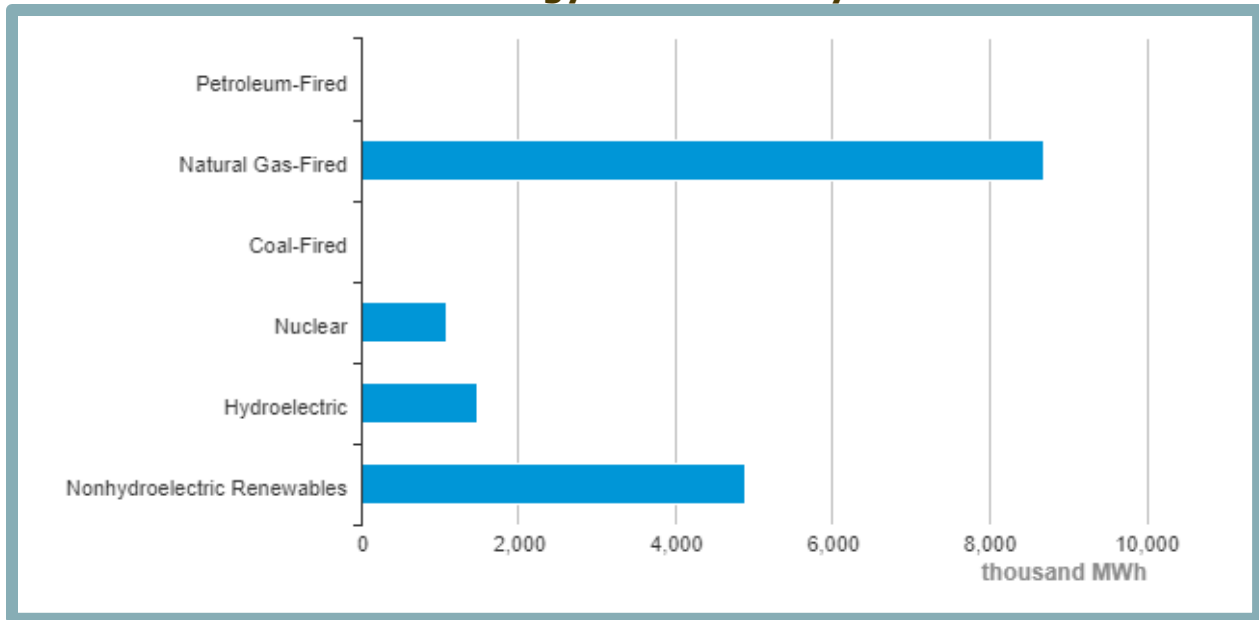
¹⁶ City of Davis. *Climate Action and Adaptation Plan* [pg. 42]. April 18, 2023.

¹⁷ U.S. Department of Energy. *State of California Energy Sector Risk Profile*. March 2021.

¹⁸ California Energy Commission. *Electricity Consumption by County*. Available at: <http://ecdms.energy.ca.gov/electbycounty.aspx>. Accessed March 2024.

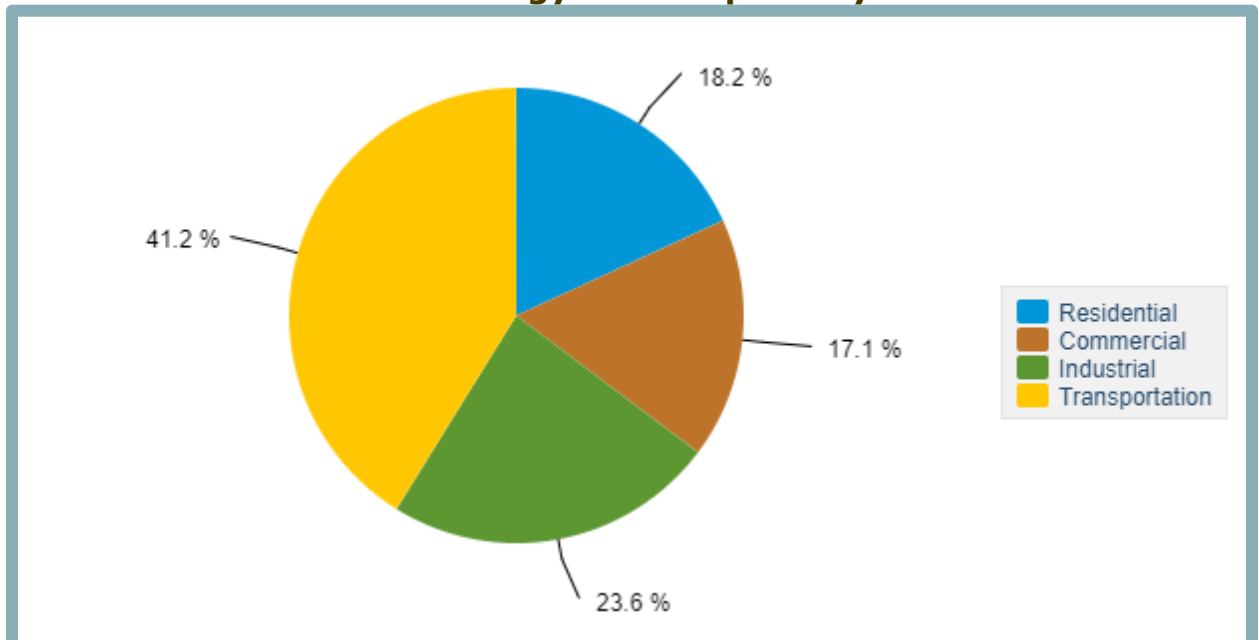


**Figure 4.2-1
California Energy Generation by Source**



Source: U.S. Energy Information Administration. California: State Profile and Energy Estimates. Available at: <https://www.eia.gov/state/index.php?sid=CA>. Accessed March 2024.

**Figure 4.2-2
California Energy Consumption by Sector**



Source: U.S. Energy Information Administration. California: State Profile and Energy Estimates. Available at: <https://www.eia.gov/state/index.php?sid=CA>. Accessed March 2024.



Beginning in June 2018, the VCE started serving the electricity needs of the cities of Woodland and Davis, as well as unincorporated areas of Yolo County. Customers within the participating areas have the opportunity to continue receiving service from PG&E or to receive energy procured by VCE. VCE plans to provide energy with a higher renewable content and lower associated GHG emissions than PG&E. While VCE supplies the energy for customers enrolled in the VCE program, VCE electricity is transmitted through PG&E-owned-and-operated distribution and power lines. PG&E will continue to provide natural gas supplies to the City.

Energy demand associated with the project site currently occurs from operation of the existing ranch home and two duplexes. In addition, as discussed throughout this SEIR, the environmental baseline for this SEIR is appropriately considered to be the approved Wildhorse Ranch Project. Energy demand associated with the Wildhorse Ranch Project would have occurred as a result of the operation of the approved 191 residential units. Typical energy use associated with such existing and approved uses include electricity for interior and exterior building lighting, heating, ventilation, and air conditioning (HVAC), electronic equipment, appliances, and more. Maintenance activities, such as landscape maintenance, also involve the use of electric- or gas-powered equipment. In addition to on-site energy use, the existing uses on-site result in transportation energy use associated with vehicle trips generated by residents and visitors.

Public Safety Power Shutoffs

In an effort to prevent fires, PG&E initiated public safety power shutoffs (PSPS) in 2019, which may continue in subsequent years until fire risks associated with power lines are decreased. PSPS events involve PG&E turning off electrical service during times when the weather is predicted to have a heightened fire risk from gusty winds and dry conditions. Dependent on the fire risks, the power outage events may occur in specific areas or for all PG&E customers across the City. Based on the project site's location, the site is located within an area that is more likely to be affected by a PSPS event.¹⁹ However, according to PG&E, zero PSPS events have occurred within the City of Davis since the initiative began in 2019.

4.2.3 REGULATORY CONTEXT

Air quality, GHG emissions, and energy consumption 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. All regulations identified in the 2009 EIR would remain applicable to the proposed project. The following section contains a summary of the additional applicable federal, State, and local regulations governing air quality, GHG emissions, and energy that have been enacted since the adoption of the 2009 EIR.

Federal Regulations Related to Air Quality

Additional applicable federal regulations governing air quality have not been enacted since the adoption of the 2009 EIR.

Federal Regulations Related to GHG Emissions

The following are the federal regulations relevant to GHG emissions that have been enacted since the adoption of the 2009 EIR.

¹⁹ Pacific Gas & Electric Co. *Interactive PSPS Planning Map*. Available at: https://vizmap.ss.pge.com/?_ga=2.94997403.624386528.1664230975-1068345172.1664230975. Accessed March 2024.



Federal Vehicle Standards

In 2010, President Obama issued a memorandum directing the Department of Transportation, Department of Energy, USEPA, and National Highway Traffic Safety Administration (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 of CO₂ per mile 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 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 CO₂ emissions by approximately 1.1 billion metric tons (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 3/1000th 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 CO₂ 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, an Executive Order (EO) was issued 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. In response to the Part One Rule, in December 2021, the U.S. Department of Transportation withdrew its portions of the "SAFE I" rule. As a result, states are now allowed to issue their own GHG emissions standards and zero-emissions vehicle mandates.²⁰ In addition, the Part Two Rule was adopted to revise the existing national GHG emission standards for passenger cars and light trucks through model year 2026. These standards are the strongest

²⁰ National Highway Traffic Safety Administration. *In Removing Major Roadblock to State Action on Emissions Standards, U.S. Department of Transportation Advances Biden-Harris Administration's Climate and Jobs Goals*. Available at: <https://www.nhtsa.gov/press-releases/cafe-preemption-final-rule>. Accessed March 2024.



vehicle emissions standards ever established for the light-duty vehicle sector and will result in avoiding more than three billion tons of GHG emissions through 2050.²¹

Federal Regulations Related to Energy

Additional applicable federal regulations governing energy have not been enacted since the adoption of the 2009 EIR.

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 that has been enacted since the certification of the 2009 EIR 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>).

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 and NO_x emissions from heavy-duty diesel vehicles. 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 Airborne Toxic Control Measure (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 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.

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 that has been enacted since the certification of the 2009 EIR 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.

²¹ U.S. Environmental Protection Agency. *Final Rule to Revise Existing National GHG Emissions Standards for Passenger Cars and Light Trucks Through Model Year 2026*. Available at: <https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-revise-existing-national-ghg-emissions>. Accessed March 2024.



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 Assembly Bill (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 million metric tons (MMT) CO₂e. 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 2008 levels 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 IPCC, from 427 MMT CO₂e to 431 MMT CO₂e.

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. 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. 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 MTCO₂e per capita by 2030, and no more than two MTCO₂e per capita by 2050, which are consistent with the State's long-term goals.

The 2022 Scoping Plan Update was adopted by the CARB in December 2022.²² The 2022 Scoping Plan builds upon previous efforts to reduce GHG emissions and is designed to continue to shift the California economy away from dependence on fossil fuels. The 2022 Scoping Plan lays out a path to achieve targets for carbon neutrality and reduce GHG emissions by 85 percent below 1990 levels by 2045, as directed by AB 1279. The actions and outcomes in the plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reductions in short-lived climate pollutants, support for sustainable development,

²² California Air Resources Board. *2022 Scoping Plan Documents*. Available at: <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents>. Accessed March 2024.



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

CARB's Regulations for the Mandatory Reporting of GHG Emissions

CARB's Regulation for the Mandatory Reporting of GHG Emissions (17 California Code of Regulations [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). In general, entities subject to the Mandatory Reporting Regulation that emit more than 10,000 MTCO₂e 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 MTCO₂e per year threshold are required to have their GHG emission report verified by a CARB-accredited third party.

SB 1383

SB 1383 establishes specific targets for the reduction of short-lived climate pollutants (SLCPs) (40 percent below 2013 levels by 2030 for CH₄ and hydrofluorocarbons (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, CH₄, and fluorinated gases.

EO B-55-18/AB 1279

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. On September 16, 2022, AB 1279, also known as the California Climate Crisis Act, codified the carbon neutrality goal established by EO B-55-18.

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.

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 (EVs) in the 2018 to 2025 model years.



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 EV 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 EV 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 EV 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 (MWELO) 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.

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 341

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.

State Regulations Related to Energy

The primary State regulatory agencies governing energy consumption are the CEC and the CPUC.

The CEC, created by the Legislature in 1974, has seven major responsibilities: forecasting future energy needs; promoting energy efficiency and conservation by setting the State's appliance and building energy efficiency standards; supporting energy research that advances energy science and technology through research, development, and demonstration projects; developing renewable energy resources; advancing alternative and renewable transportation fuels and technologies; certifying thermal power plants 50 MW and larger; and planning for and directing State response to energy emergencies.²³

The CPUC regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies. The CPUC is responsible for ensuring that customers have safe, reliable utility service and infrastructure at reasonable rates, regulating utility services, stimulating innovation, and promoting competitive markets.²⁴

The State has adopted various regulations aimed at reducing energy consumption, increasing energy efficiency, and mandating sourcing requirements for electricity production. The following includes applicable regulations related to energy that have been enacted since the certification of the 2009 EIR.

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, which is known as the California Building Standards Code (CBSC), 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 (Public Resources Code [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.

²³ California Energy Commission. *About the California Energy Commission*. Available at: <http://www.energy.ca.gov/about>. Accessed March 2024.

²⁴ California Public Utilities Commission. *California Public Utilities Commission*. Available at: <https://www.cpuc.ca.gov/about-cpuc>. Accessed March 2024.



The 2022 Title 24 standards are the currently applicable building energy efficiency standards and became effective on January 1, 2023. Compliance with the 2022 Title 24 Building Energy Efficiency Standards will reduce energy use and associated GHG emissions compared to structures built in compliance with the previous 2019 Title 24 standards. The 2022 Title 24 standards focus on four key areas in newly constructed homes and businesses:²⁵

- Encouraging electric heat pump technology for space and water heating, which consumes less energy and produces fewer emissions than gas-powered units.
- Establishing electric-ready requirements for single-family homes to position owners to use cleaner electric heating, cooking and EV charging options whenever they choose to adopt those technologies.
- Expanding solar PV system and battery storage standards to make clean energy available onsite and complement the state's progress toward a 100 percent clean electricity grid.
- Strengthening ventilation standards to improve indoor air quality.

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 the CALGreen Code, 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 2022 standards, which are the current standards, improved upon the 2019 CALGreen standards, and went into effect on January 1, 2023. 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' MWEL0;
- 65 percent of construction and demolition waste must be diverted from landfills;
- Mandatory inspections of energy systems to ensure optimal working efficiency;
- Inclusion of EV 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. According to Section A4.602 of Appendix A4 of the CALGreen Code, 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

²⁵ California Energy Commission. *Energy Commission Adopts Updated Building Standards to Improve Efficiency, Reduce Emissions From Homes and Businesses*. Available at: <https://www.energy.ca.gov/news/2021-08/energy-commission-adopts-updated-building-standards-improve-efficiency-reduce-0>. Accessed March 2024.



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.

Climate Change Scoping Plan

Expanding and strengthening existing energy efficiency programs as well as building and appliance standards is the key element of the Scoping Plan, as introduced above, related to building energy.

Transportation/Fuel Energy

The following regulations relate to fuel efficiency and energy use reductions in the transportation and motorized vehicle sector.

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, CEC, 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 1346

AB 1346 (October 2021) prohibits non-electric small off-road engines. Small off-road engines, which are used primarily in lawn and garden equipment, emit high levels of air pollutants and, in 2020, California daily criteria pollutant emissions from small off-road engines were higher than emissions from light-duty passenger cars. Thus, by January 1, 2024, regulations shall prohibit engine exhaust and evaporative emissions from new small off-road engines.



SB 500

SB 500 (September 2021) requires that, beginning January 1, 2030, to the extent allowed by federal law, any autonomous vehicle that is model year 2031 or later, has a gross vehicle weight rating of less than 8,501 pounds, and is equipped with Level 3, 4, or 5 automation (as defined by the International Society of Automotive Engineers) to be a zero-emission vehicle to be operated on California public roads.

Climate Change Scoping Plan

The key elements of the Scoping Plan, as introduced above, related to transportation energy include the following:

1. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets; and
2. Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the LCFS (17 CCR Section 95480, et seq.).

Renewable Energy and Energy Procurement

The following regulation relates 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), SB 350, 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 following are the regulatory agencies and regulations pertinent to the proposed project on a local level.

The most prominent local regulations related to air quality, GHG emissions, and energy are established by the YSAQMD and the City of Davis, as discussed in further detail below.

YSAQMD

Various local, regional, State and federal agencies share the responsibility for air quality management in Yolo County. The YSAQMD operates at the local level with primary responsibility for attaining and maintaining the federal and State AAQS in Yolo County. The YSAQMD is tasked



with implementing programs and regulations required by the FCAA and the CCAA, including preparing plans to attain federal and State AAQS. The YSAQMD works jointly with the USEPA, CARB, SACOG, other air districts in the region, county and city transportation and planning departments, and various non-governmental organizations to improve air quality through a variety of programs. Programs include the adoption of regulations, policies and guidance, extensive education and public outreach programs, as well as emission reducing incentive programs.

YSAQMD CEQA Guidance

Nearly all development and mining projects in the region have the potential to generate air pollutants that may increase the difficulty of attaining federal and State AAQS. Therefore, for most projects, evaluation of air quality impacts is required to comply with CEQA. In order to help public agencies evaluate air quality impacts, the YSAQMD has developed the Handbook for Assessing and Mitigating Air Quality Impacts.²⁶ The YSAQMD's handbook includes screening methodology and recommended thresholds of significance, including mass emission thresholds for construction-related and operational criteria pollutants. Although the YSAQMD's handbook includes emissions thresholds and analysis methodology for criteria pollutants, the YSAQMD has not yet established or adopted methodology or thresholds for the assessment of impacts related to GHG emissions.

YSAQMD Rules and Regulations

All projects under the jurisdiction of the YSAQMD are required to comply with all applicable YSAQMD rules and regulations. In addition, YSAQMD permit requirements apply to most industrial processes (e.g., manufacturing facilities, food processing), many commercial activities (e.g., print shops, drycleaners, gasoline stations), and other miscellaneous activities (e.g., demolition of buildings containing asbestos and aeration of contaminated soils). The YSAQMD regulations and rules include, but are not limited to, the following:

Regulation II – Prohibition, Exceptions - Requirements

Regulation II 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 2.1 (Control of Emissions), Rule 2.28 (Cutback and Emulsified Asphalts), Rule 2.5 (Nuisance), Rule 2.11 (Particulate Matter Concentration), Rule 2.14 (Architectural Coatings), and Rule 2.40 (Wood Burning Appliances). Considering the relevance of Rule 2.5 and Rule 2.11 to the proposed activities, both rules are discussed in further depth below.

Rule 2.5 – Nuisance

Rule 2.5 prohibits the discharge of sufficient quantities of air contaminants or other materials that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public. The rule further protects the public from being subject to air contaminants and other materials that could endanger the comfort, repose, health, or safety of any persons, or could damage business or property.

Rule 2.11 – Particulate Matter Concentration

Rule 2.11 is intended to protect the ambient air quality within the YSAQMD's jurisdiction by establishing a standard for PM emissions. Per the definitions of Rule 2.11, PM is

²⁶ Yolo-Solano Air Quality Management District. *Handbook for Assessing and Mitigating Air Quality Impacts*. July 11, 2007.



defined as any material that is emitted as a liquid or solid particles, or gaseous materials that becomes liquid or solid particles when collected at standard conditions. PM meeting the foregoing definition, shall not be released from any single source operation, dust, fumes, or other total suspended particulate matter emissions in excess of 0.1 grain per cubic foot of gas at dry standard conditions.

Regulations III – Permit System

Regulation III 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 III primarily deals with permitting major emission sources and includes, but is not limited to, rules such as General Permit Requirements (Rule 3.1), Exemptions (Rule 3.2), Portable Equipment (Rule 3.3), New Source Review (Rule 3.4), Emission Reduction Credits (Rule 3.5), Emission Statements (Rule 3.7), and Toxics New Source Review (Rule 3.13).

Air Quality Attainment Plans

As a part of the SVAB federal ozone nonattainment area, the YSAQMD works with the other local air districts within the Sacramento area to develop a regional air quality management plan under the FCAA requirement. The currently applicable regional air quality management plan is called the SIP which describes and demonstrates how the Sacramento nonattainment area (in which the project site is located) would attain the required NAAQS by the proposed attainment deadline. In accordance with the requirements of the FCAA, the YSAQMD, 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) in December 2008. The CARB determined that the Ozone Attainment Plan met FCAA requirements and approved the Plan on March 26, 2009 as a revision to the SIP. An update to the plan, *2017 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* (2017 Ozone Attainment Plan), was prepared and adopted by CARB on November 16, 2017. An additional update to the plan was prepared and adopted by CARB on October 15, 2018, and known as the *2018 Updates to the California State Implementation Plan*.

The Ozone Attainment Plan, and subsequent updates, demonstrate how existing and new control strategies would provide the necessary future emission reductions to meet the FCAA requirements, including the NAAQS. 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 (RACT) and reasonably available control technology (RACT). The USEPA published designations for areas in attainment/unclassifiable for the 2015 ozone standards. The USEPA identified the entire Yolo County as nonattainment for the 2015 ozone standards.²⁷

City of Davis

In addition to the City's General Plan goals and policies, the City of Davis has various strategies for reducing the City's air pollution, GHG emissions, and energy demand. In 1999, Davis joined a

²⁷ U.S. Environmental Protection Agency. *California Final Area Designations for the 2015 Ozone National Ambient Air Quality Standards Technical Support Document*. June 3, 2018.



small group of cities calling for local action and a national policy on climate change. In 2006, the City joined the U.S. Conference of Mayors Climate Protection Agreement that called for local and national action to reduce GHG emissions. In a follow-up action in spring 2007, the Davis City Council unanimously adopted a strategy to reduce the City's GHG emissions. Based on the City Council action, the City joined the *Cities for Climate Protection* (CCP) program along with hundreds of other communities across the globe to reduce GHG emissions at the local level. The program is designed to educate and empower local governments to take action on climate change. The CCP is a performance-oriented campaign that offers a framework for local governments to reduce greenhouse gas emissions and improve livability within their municipalities. As part of this effort, the City of Davis has undertaken various actions to reduce GHG emissions within the City of Davis, including the adoption of the City's CAAP, as well as adoption of local GHG reduction targets, carbon budgets, and carbon allowances for residential land uses.

On March 5, 2019, the Davis City Council adopted a resolution declaring a climate emergency, which proposed a regional mobilization effort to reduce the effects of climate change. As part of the regional mobilization effort, the resolution accelerated the City's previously stated goal of achieving carbon neutrality by the year 2050 to a new carbon neutrality target date of 2040.

The following are the City of Davis regulations pertinent to the proposed project related to air quality, GHG emissions, and energy.

City of Davis General Plan

The City's General Plan includes the following applicable goals, performance objectives, and policies related to air quality, GHG emissions, and energy.

Air Quality Chapter

Goal AIR 1. Maintain and strive to improve air quality.

Policy AIR 1.1 Take appropriate measures to meet the AQMD's goal for improved air quality.

Transportation Element

Goal #2 The Davis transportation system will evolve to improve air quality, reduce carbon emissions, and improve public health by encouraging usage of clean, energy-efficient, active (i.e. human powered), and economically sustainable means of travel.

Performance Objective #2.1 Reduce carbon emissions from the transportation sector by 61 percent by 2035.

Performance Objective #2.2 Reduce vehicle miles traveled (VMT) 39 percent by 2035.

Policy TRANS 1.5 Strive for carbon-neutrality or better from the transportation component of new residential development.



Policy TRANS 1.6	Reduce carbon emissions from the transportation system in Davis by encouraging the use of non-motorized and low carbon transportation modes.
Policy TRANS 1.7	Promote the use of electric vehicles and other low-polluting vehicles, including Neighborhood Electric Vehicles (NEV).
Policy TRANS 1.8	Develop and maintain a work trip-reduction program designed to reduce carbon emissions, criteria pollutants, and local traffic congestion.
Policy TRANS 3.3	Require new development to be designed to maximize transit potential.
Policy TRANS 4.4	Provide pedestrian and bicycle amenities.
Policy TRANS 4.5	Establish and implement bicycle parking standards for new developments and significant redevelopment.

Energy Chapter

Goal ENERGY 1. Reduce per capita energy consumption in Davis.

Policy ENERGY 1.3	Promote the development and use of advanced energy technology and building materials in Davis.
Policy ENERGY 1.5	Encourage the development of energy-efficient subdivisions and buildings.

Davis Climate Action and Adaptation Plan

The City of Davis adopted the Davis 2020-2040 CAAP in April 2023.²⁸ The CAAP is designed to place the community on a path to achieve carbon neutrality by 2040.

The CAAP includes measurable GHG emissions reduction and climate change adaptation actions that align with the City's net neutrality goals. When implemented, the actions are anticipated to reduce GHG emissions by 37 percent below 2016 levels by 2030 and set the community on a trajectory toward the 2040 carbon neutrality goal. The CAAP actions are intended to prepare the community for climate change impacts, improve public safety, address environmental justice, and enhance the quality of life for residents. Each action achieves a plan goal, organized by sector, as follows: (1) Building Energy and Design; (2) Transportation and Land Use; (3) Water Conservation and Waste Reduction; (4) Climate Adaptation; and (5) Carbon Removal. The CAAP also aims to reduce energy demand by making buildings more efficient, and expanding local renewable energy development and storage.

The Davis CAAP serves as a Qualified GHG Reduction Strategy under Section 15183.5 of the CEQA Guidelines, simplifying development review for new projects that are consistent with the CAAP.

²⁸ City of Davis. *Climate Action and Adaptation Plan*. April 18, 2023.



City of Davis Municipal Code

The following City of Davis Municipal Code sections would be applicable to the proposed project.

Section 8.01.060

Section 8.01.060 of the Davis Municipal Code includes updated requirements related to energy efficient water heating systems and undergrounding of all electrical and communication service laterals to any new building or structures.

Section 8.01.090

Section 8.01.090 of the Municipal Code requires mandatory compliance with Tier 1 standards of the CALGreen Code, which would otherwise be voluntary under the CBSC. According to Section A4.602 of Appendix A4 of the CALGreen Code, CALGreen's voluntary 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.

Section 8.01.100

In addition to all requirements of the California Energy Code applicable to new single-family dwellings and new low-rise multi-family dwellings,²⁹ Section 8.01.100 of the City of Davis Municipal Code requires that all mixed-fuel dwellings³⁰ comply with the following:

- a) **New single-family dwellings.** New mixed-fuel, single-family dwellings shall be required to meet a Total Energy Design Rating (EDR) margin of 9.5 as defined by the 2022 California Energy Code. In addition, the electrical system design shall provide capacity for a future retrofit to facilitate the installation of all electric appliances. This includes capacity and space at the electrical service panel, prewiring and installed circuit breakers for the following appliances:
 - 1) Heat-pump water heater;
 - 2) Induction stove top and oven;
 - 3) Electric clothes dryer; and
 - 4) Heat-pump for code-required comfort heating.
- b) **New low-rise multi-family dwellings.** New mixed-fuel, low-rise multi-family dwellings shall be required to meet a Total Energy Design Rating (EDR) margin of 10 as defined by the 2022 California Energy Code. In addition, the electrical system design shall provide capacity for a future retrofit to facilitate the installation of all electric appliances. This includes capacity and space at the electrical service panel, pre-wiring and installed circuit breakers for the following appliances:
 - 1) Heat-pump water heater (if applicable);
 - 2) Induction stove top and oven;
 - 3) Electric clothes dryer (if applicable); and
 - 4) Heat-pump for code-required comfort heating.

²⁹ For the purposes of CALGreen, low-rise multi-family is defined as residential buildings that include three stories or less.

³⁰ A "mixed-fuel dwelling" is a dwelling that uses natural gas or propane as fuel for space heating, water heating (including pools and spas), cooking appliances, or clothes drying appliances or is plumbed for such equipment.



Section 8.01.110

In addition to all requirements of the CALGreen Code applicable to new non-residential and high-rise multi-family dwellings,³¹ Section 8.01.110 of the City of Davis Municipal Code requires the following:

- a) **New non-residential buildings.** New non-residential buildings shall comply with the Tier 1 (ten percent compliance margin) requirement for energy efficiency by employing energy efficiency measures. In addition, a PV system sized to offset a portion of the total building energy use based on TDV energy is required. The PV sizing shall be consistent with the methodology included in the cost effectiveness study provided by TRC. The PV sizing calculations were developed such that PV size would be the lessor of approximately eighty percent offset of the building's modeled annual electric load or fifteen DC watts per square feet of solar zone. The solar zone must have a total area of no less than fifteen percent of the total roof area in accordance with Section 9.3.1 of the 2016 Non-residential Compliance Manual.
- b) **New high-rise multi-family dwellings.** New high-rise multi-family dwellings shall comply with the Tier 1 (ten percent compliance margin) requirement for energy efficiency by employing energy efficiency measures. In addition, a PV system sized to offset a portion of the total building energy use based on TDV energy is required. The PV sizing calculations were developed such that PV size would be the lessor of approximately eighty percent offset of the building's modeled annual electric load or fifteen DC watts per square feet of solar zone. The solar zone must have a total area of no less than fifteen percent of the total roof area in accordance with Section 9.3.1 of the 2016 Non-residential Compliance Manual.
- c) New non-residential and high-rise multi-family buildings shall incorporate EV charging stations as determined by Tables 1 and 2 (see Table 4.2-6 and Table 4.2-7). Each EV charging station installed shall be credited toward the CALGreen Code requirement for charging spaces.

4.2.4 IMPACTS AND MITIGATION MEASURES

The standards of significance and methodology used to analyze and determine the potential 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 Appendix G of the CEQA Guidelines, an impact related to air quality, GHG emissions, or energy would be 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 nonattainment under an applicable federal or State AAQS;
- Expose sensitive receptors to substantial pollutant concentrations;
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people;
- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment;

³¹ For the purposes of CALGreen, high-rise multi-family is defined as residential buildings that include four stories or greater.



**Table 4.2-6
Non-residential EV Charging Station Standards**

Non-Residential Land Use Category	Required Parking Spaces	EV Chargers	Land Use (from City Parking Code; City Code Section 40.25.090)
Retail	0-10	0	<ol style="list-style-type: none"> 1. Automobile or machinery sales and service garages. 2. Banks, post offices, business and professional offices. 3. Furniture and appliance stores, household equipment or furniture repair shop. 4. Laundrettes. 5. Restaurants, beer parlors, nightclubs, and cardrooms. 6. Retail stores, shops, etc. 7. Rooming and lodging houses. 8. Shopping center, neighborhood. 9. Shopping center, community. 10. Land uses where up to 50% of spaces serving employees.
	11-51	1	
	52-102	2	
	Every Additional 50	+1	
Non-Retail	0-10	0	<ol style="list-style-type: none"> 1. Group care homes. 2. Hospitals. 3. Hotels and motor hotels, motels. 4. Manufacturing plants, research or testing laboratories and bottling plants. 5. Medical or dental clinics. 6. Rest home, sanatorium, convalescent home or hospital. 7. Wholesale establishments, warehouses. 8. Land uses where more than 50% of spaces serving employees.
	11-26	1	
	27-42	2	
	Every Additional 15	+1	
Destination	0-10	0	<ol style="list-style-type: none"> 1. Bowling alleys. 2. Churches, schools, day care centers and nursery schools. 3. Dance halls and assembly halls without fixed seats, exhibition halls except assembly rooms in conjunction with auditorium. 4. Funeral home, mortuaries. 5. Sports arenas auditoriums, theaters, assembly halls.
	11-36	1	
	37-62	2	
	Every Additional 25	+1	

Notes:

- (1) All other non-modified Tier 1 standards for nonresidential EV charging apply.
- (2) All required charging is Level 2 with the exception of non-retail (workplace) charging which can be satisfied by fifty percent Level 1 chargers with fifty percent payment-ready Level 2 chargers due to longer dwell times. Note: calculations for total number of chargers shall be rounded up and rounding shall favor Level 2 chargers.
- (3) The first two chargers placed at non-retail (workplace) locations must be payment-ready Level 2 with subsequent chargers optionally Level 1.
- (4) Fifty percent of required non-retail (workplace) chargers to be installed prior to issuance of certificate of occupancy if approved prior to January 1, 2020. Remaining required chargers do not have to be installed at time of construction but must be pre-wired and have adequate electrical panel capacity for each future charger. After January 1, 2020, all required chargers must be fully installed.
- (5) Chargers should be placed to serve multiple parking spaces – see design recommendations in Section 5 of the City of Davis EV Charging Plan.
- (6) EV charging parking spaces shall be included in the required number of parking spaces per Article 40.25 of the City of Davis Zoning Ordinance. If space is available in a parking lot, additional EV charging spaces may be installed beyond the minimum number required subject to review and approval by the department of community development and sustainability.

(Continues on next page)



Table 4.2-6 Non-residential EV Charging Station Standards			
Non-Residential Land Use Category	Required Parking Spaces	EV Chargers	Land Use (from City Parking Code; City Code Section 40.25.090)
(7) Conversion of existing parking spaces for EV charging purposes shall be reviewed and approved by the director of community development to assure a balance between full-size parking spaces, compact parking spaces and parking spaces for persons with disabilities.			

Table 4.2-7 Residential EV Charging Station Standards		
Development Type	Tier 1 Modifications	Notes
Single-Family (1-3 units)	1. Single-family residential development required to pre-install 8 gauge wiring plus reserve room in electrical panel necessary to support Level 2 electric vehicle charging.	1. Addresses key barrier for adding Level 2 home EV charger.
Multi-Family (4 or more units)	1. Multi-family residential development projects are required to provide: (1) Level 1 charging at 5% of all required parking spaces with a minimum of 2 parking spaces served; (2) Level 2 charging at 1% of all required parking spaces where more than 20 parking spaces are required with a minimum of 1 parking space served; (3) conduit adequate for Level 2 charging to serve or reasonably be extended in the future to 25% of all parking spaces; and (4) room in panel(s) and capacity to serve 20% of all parking spaces with Level 1 charging and 5% of all parking spaces with Level 2 charging. Notes: (1) properly located, a single charger can serve multiple parking spaces; (2) reasonable future extension of conduit would not include the removal or trenching of hardscaped surfaces or areas where mature trees would be expected to establish (e.g., pavement, tree wells, etc.).	2. Addresses key barrier for EV use in residential rental settings.
Notes:		
(1) All other non-modified Tier 1 standards for residential EV charging apply.		
(2) Chargers in multi-family residential settings should be placed to serve multiple parking spaces – see design recommendations in Section 5 of the City of Davis EV Charging Plan.		
(3) Level 1 in the context above is defined as a 20A 120V circuit and Level 2 is defined as a 40A 208V/240V circuit.		
(4) Level 1 is defined as a 120V hardwired EVSE not a household outlet.		
(5) Monitoring equipment to properly charge tenants is encouraged at multi-family locations.		

- 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; or
- Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

Pursuant to CEQA Guidelines Section 15064.4(b)(2), the lead agency is charged with determining a threshold of significance that is applicable to the project. For the analysis within this SEIR, the City has elected to use the YSAQMD's thresholds of significance, as well as the City of Davis adopted goal of net carbon neutrality by the year 2040, as set forth in the City's CAAP. The



analysis in this SEIR uses the thresholds for criteria pollutants, localized CO, TAC emissions, and GHG emissions, as discussed below.

Criteria Pollutant Emissions

The YSAQMD significance thresholds for emissions of ROG, NO_x, and PM₁₀ are presented in Table 4.2-8 below and expressed in maximum tons per year (tons/yr) for ROG and NO_x and maximum pounds per day (lbs/day) for PM₁₀. If the proposed project's emissions exceed the pollutant thresholds presented in Table 4.2-8, 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.

Table 4.2-8 YSAQMD Thresholds of Significance		
Pollutant	Construction Threshold	Operational/Cumulative Threshold
ROG	10 tons/yr	10 tons/yr
NO _x	10 tons/yr	10 tons/yr
PM ₁₀	80 lbs/day	80 lbs/day
<i>Source: YSAQMD. Handbook for Assessing and Mitigating Air Quality Impacts. July 11, 2007.</i>		

With regard to cumulative emissions of criteria air pollutants, according to the YSAQMD Handbook for Assessing and Mitigating Air Quality Impacts, any project that would individually have a significant air quality impact (i.e., exceed the project level thresholds presented in Table 4.2-8) would also be considered to have a significant cumulative impact.³² As a result, the cumulative-level emissions thresholds established by YSAQMD are assumed to be identical to the project-level emissions thresholds presented in Table 4.2-8, above.

Ascertaining cancer risk, or similar measurements of health effects from air pollutants, is very difficult for regional pollutants such as the ozone precursors ROG and NO_x. This challenge was addressed in *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 510, 517-522. In that case, the California Supreme Court held generally that an EIR should “make a reasonable effort to substantively connect a project’s air quality impacts to likely health consequences.” A possible example of such a connection would be to calculate a project’s “impact on the days of nonattainment per year.” But the court recognized that there might be scientific limitations on an agency’s ability to make the connection between air pollutant emissions and public health consequences in a credible fashion, given limitations in technical methodologies. Thus, the court acknowledged that another option for an agency preparing an EIR might be “to explain why it was not feasible to provide an analysis that connected the air quality effects to human health consequences.”

Here, the YSAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of emissions in Yolo County. At present, the YSAQMD has not provided any methodology to assist local governments in reasonably and accurately assessing the specific connection between mass emissions of ozone precursors (e.g., ROG and NO_x) and other pollutants of concern on a regional basis and any specific effects on public health or regional air quality concentrations that might result from such mass emissions.

³² Yolo-Solano Air Quality Management District. *Handbook for Assessing and Mitigating Air Quality Impacts*. July 11, 2007.



Ozone concentrations, for instance, depend upon various complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground level ozone concentrations related to the NAAQS and CAAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds. To achieve the health-based standards established by the EPA, the air districts prepare air quality management plans that detail regional programs to attain the AAQS. However, if a project within the YSAQMD exceeds the regional significance thresholds, the proposed project could contribute to an increase in health effects in the basin until the attainment standards are met in the SVAB.

Notably, during the litigation process that led to the California Supreme Court decision in *Sierra Club v. County of Fresno*, the San Joaquin Valley Air Pollution Control District (SJVAPCD) submitted an amicus curiae brief that provided scientific context and expert opinion regarding the feasibility of performing regional dispersion modeling for ozone. In the brief, SJVAPCD states that “CEQA does not require an EIR to correlate a project’s air quality emissions to specific health impacts, because such an analysis is not reasonably feasible.” As SJVAPCD explains:

Attainment of a particular NAAQS occurs when the concentration of the relevant pollutant remains below a set threshold on a consistent basis throughout a particular region. For example, the San Joaquin Valley attained the 1-hour ozone NAAQS when ozone concentrations remained at or below 0.124 parts per million Valley-wide on 3 or fewer days over a 3-year period. Because the NAAQS are focused on achieving a particular concentration of pollution region-wide, the Air District’s tools and plans for attaining the NAAQS are regional in nature.

For instance, the computer models used to simulate and predict an attainment date for the ozone or particulate matter NAAQS in the San Joaquin Valley are based on regional inputs, such as regional inventories of precursor pollutants (NO_x, SO_x and VOCs) and the atmospheric chemistry and meteorology of the Valley. At a very basic level, the models simulate future ozone or PM levels based on predicted changes in precursor emissions Valley wide. Because the NAAQS are set levels necessary to protect human health, the closer a region is to attaining a particular NAAQS, the lower the human health impact is from that pollutant.

The goal of these modeling exercises is not to determine whether the emissions generated by a particular factory or development project will affect the date that the Valley attains the NAAQS. Rather, the Air District’s modeling and planning strategy is regional in nature and based on the extent to which all of the emission-generating sources in the Valley (current and future) must be controlled in order to reach attainment.

Accordingly, the Air District has based its thresholds of significance for CEQA purposes on the levels that scientific and factual data demonstrate that the [SJVAB] can accommodate without affecting the attainment date for the NAAQS. The Air District has tied its CEQA significance thresholds to the level at which stationary pollution sources must “offset” their emissions...Thus, the CEQA air quality analysis for criteria air pollutants is not really a localized, project-level impact analysis but one of regional cumulative impacts.

The brief explains that these CEQA thresholds of significance are not intended to be applied such that any localized human health impact associated with a project’s regional pollutant emissions could be identified. Rather, CEQA thresholds of significance are used to determine whether a project’s emissions would obstruct a region’s capability of attaining the NAAQS and CAAQS according to the emissions inventory prepared in a SIP, which is then submitted and reviewed by CARB and EPA. This sentiment is corroborated in an additional brief submitted by the South



Coast Air Quality Management District. Based on the expert analyses submitted by these leading air districts, the City has concluded that it is not scientifically feasible to predict in a meaningful manner how mass emissions of pollutants of regional concern (e.g., ozone precursors) from a project of the size of the proposed project could lead to specific public health consequences, changes in pollutant concentrations, or changes in the number of days for which the SVAB will be in nonattainment for regional pollutants.

Localized CO Emissions

The YSAQMD recommends the use of screening thresholds to assess a project's potential to create an impact through the creation of CO hotspots. A violation of the CO standard could occur if either of the following criteria is true of any street or intersection affected by the mitigated project:³³

- The project would reduce peak-hour level of service (LOS) on one or more streets or at one or more intersections to an unacceptable LOS (typically LOS E or F); or
- The project would increase a traffic delay by 10 or more seconds on one or more streets or at one or more intersections in the project vicinity where a peak hour LOS of F currently exists.

However, considering that the law has changed with respect to how transportation-related impacts may be addressed under CEQA such that unacceptable LOS is no longer considered a significant impact on the environment under CEQA, the analysis herein related to localized CO emissions uses guidance from the nearby Sacramento Metropolitan Air Quality Management District (SMAQMD) and Placer County Air Pollution Control District (PCAPCD). According to the SMAQMD's CEQA Guide,³⁴ emissions of CO are generally of less concern than other criteria pollutants, as operational activities are not likely to generate substantial quantities of CO, and the SVAB has been in attainment for CO for multiple years. Thus, SMAQMD no longer recommends an analysis of localized CO emissions. The PCAPCD, which has jurisdiction over a portion of the SVAB and is adjacent to the YSAQMD, has a screening level for localized CO impacts. According to the PCAPCD screening level, a project could result in a significant impact if the project would result in CO emissions from vehicle operations in excess of 550 lbs/day.³⁵

TAC Emissions

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. As such, in addition to the thresholds of significance presented above for criteria air pollutants, YSAQMD has also developed thresholds for potential exposure of the public to TACs from new stationary sources. Exposure of the public to TACs from new stationary sources in excess of the following thresholds would be considered a significant impact:

- Probability of contracting cancer for the Maximally Exposed Individual (MEI) equals to 10 in one million or more; and

³³ Yolo-Solano Air Quality Management District. *Handbook for Assessing and Mitigating Air Quality Impacts* [p. 21]. July 11, 2007.

³⁴ Sacramento Metropolitan Air Quality Management District. *CEQA Guide*. April 2020.

³⁵ Placer County Air Pollution Control District. *CEQA Air Quality Handbook*. November 21, 2017.



- Ground-level concentrations of non-carcinogenic TACs would result in a Hazard Index equal to 1 for the MEI or greater.

Although the YSAQMD has established thresholds for exposure to TACs from new stationary sources, a threshold for exposure of the public to mobile TAC emissions, such as emissions associated with DPM from heavy-duty diesel trucks or off-road construction equipment, does not currently exist. In the absence of a specified threshold for assessing impacts of mobile sources of TACs on a sensitive land use, the industry standard is to use the stationary source threshold of an increase in cancer risk of 10 in one million and a Hazard Index greater than one, which is the standard that has been used throughout the State for similar health risk analyses.

GHG Emissions

With respect to establishing significance thresholds for GHG emissions, CEQA Guidelines Section 15064.4 states:

- (a) The determination of the significance of GHG emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of GHG emissions resulting from a project.
- (b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from GHG emissions on the environment:
 - (1) The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
 - (2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;
 - (3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

Thus, one threshold that is commonly used to analyze a project's GHG emissions is whether the project would conflict with or obstruct the goals, strategies, or governing regulation (Health & Safety Code, Section 38500-38599) of the California Global Warming Solutions Act of 2006 (AB 32) and the GHG reduction targets in SB 32.

The YSAQMD, in their Handbook for Assessing and Mitigating Air Quality Impacts, acknowledges that new emissions generated by development projects could potentially conflict with existing GHG emissions reductions targets, and thus, a need for development of GHG emissions thresholds exists. However, the YSAQMD has not yet established or adopted any GHG emissions thresholds. The YSAQMD is currently recommending GHG analysis consistent with the SMAQMD adopted thresholds of significance. While SMAQMD recognizes that emissions from a single project cannot be determined to substantially impact overall GHG emissions levels in the atmosphere, an emissions threshold is useful to trigger further project review and assess mitigation. As such, SMAQMD has developed thresholds for project construction and operational GHG emissions that allow for review of proposed projects to ensure consistency with the emissions-reduction goals of AB 32, SB 32, the Scoping Plan, and relevant executive orders.



Although SMAQMD has developed thresholds for project CEQA review, SMAQMD further specified that where cities have adopted city-specific climate action plans or GHG reduction plans, proposed projects should be assessed in relation to those city-specific plans, rather than SMAQMD's thresholds. As discussed in further depth below, the City of Davis has adopted a CAAP, which is considered the relevant GHG reduction program for operational GHG emissions of existing and proposed developments within the City.

The 2020 Yolo County Regional GHG Emissions Inventory Update for the Cities of Davis, Winters and Woodland – Draft Technical Memorandum (2020 GHG Emissions Inventory), includes an estimation of citywide 2016 emissions levels, which were used as the basis for the City of Davis's citywide GHG reduction target thresholds.³⁶ The emissions reductions targets provide a desired rate of reduction, which are more ambitious than the State's most recent target set in EO B-55-18, and include achievement of citywide carbon neutrality by 2040.

The CAAP includes measurable GHG emissions reduction and climate change adaptation actions that align with the City's net neutrality goals. When implemented, the actions are anticipated to reduce GHG emissions within the City by 37 percent below 2016 levels by 2030 and set the community on a trajectory toward the 2040 carbon neutrality goal. As such, projects that were considered within the 2020 GHG Emissions Inventory can be addressed through the CAAP GHG emissions reduction and climate change adaptation actions.

As discussed above, the project site was previously approved by the City for development of the Wildhorse Ranch Project, which included buildout of the site with of up to 191 residential units. The environmental baseline for this SEIR is appropriately considered to be the approved Wildhorse Ranch Project. In order to maintain the emissions reductions trajectory anticipated by the CAAP and mandated by the City's climate emergency declaration, the proposed project would be required to demonstrate that operations on the site would not exceed the previously anticipated emissions levels associated with the Wildhorse Ranch Project (i.e., baseline conditions). Should the proposed project result in increased on-site operational emissions relative to baseline conditions, the project would be responsible for reducing operational emissions to a level equal to baseline conditions (i.e., no net increase as compared to baseline conditions). By ensuring that emissions from the proposed project remain at or below baseline conditions, the project would provide a proportionate share of emissions reductions and would not inhibit attainment of citywide net carbon neutrality by the year 2040, nor would the project conflict with the City's CAAP.

Therefore, the proposed project would be considered to conflict with the City's GHG reduction targets, if the project would result in net positive operational GHG emissions by the year 2040. It should be noted that conformance with the City's goal of net carbon neutrality by 2040 would demonstrate compliance with the City's CAAP and consistency with the statewide reduction targets of AB 32 and SB 32.

Although the City has adopted clear GHG reductions goals, which the City has elected to use as operational thresholds for the proposed project in this EIR, the City has not specifically adopted goals or thresholds to analyze GHG emissions associated with construction of proposed projects. As discussed above, the YSAQMD is currently recommending GHG analysis consistent with the SMAQMD adopted thresholds of significance. For construction-related GHG emissions, the SMAQMD has adopted a threshold of significance of 1,100 MTCO₂e/yr. As such, if construction

³⁶ Yolo County Department of Community Services. *Yolo County Regional Greenhouse Gas Emissions Inventory Update for the Cities of Davis, Winters and Woodland – Draft Technical Memorandum*. April 30, 2020.



of the proposed project would result in emissions that exceed 1,100 MTCO₂e/yr, then construction of the proposed project could be considered to result in a potentially significant impact and mitigation measures would be required.

Energy

Quantitative thresholds for the analysis of potential impacts related to energy consumption have not been adopted by any local, regional, or statewide entities. Consequently, potential impacts of the project related to energy will be determined based on whether the project would result in wasteful, inefficient, or unnecessary use of energy. In addition, the potential for the project to conflict with or obstruct a State or local plan for renewable energy generation or energy efficiency is considered. The analysis of energy consumption includes consideration of energy demand during both project construction and operations.

Method of Analysis

In cases where an approved project has already undergone environmental review, and the environmental document has been adopted by the lead agency, the lead agency can restrict the current review to the incremental effects of the modified project, rather than having to reconsider the overall impacts of the project. In such cases, as the project under review constitutes only a modification of a previously approved project, the “baseline” for the purposes of CEQA is adjusted such that the originally approved project is assumed to exist.³⁷ Thus, the environmental baseline for this SEIR is appropriately considered to be the approved 2009 Wildhorse Ranch Project, and the analysis included herein is focused on the potential for the proposed project to result in new significant air quality, GHG emissions, and energy impacts not previously identified in the 2009 EIR, or a substantial increase in the severity of significant impacts previously identified in said 2009 EIR.

A comparison of project-related emissions to the emissions that would result from buildout of the site under the conditions approved in the 2009 EIR, as well as to the thresholds discussed above, shall determine the significance of the potential impacts related to air quality, GHG emissions, and energy usage resulting from the proposed project. Emissions attributable to the proposed project that would result in a net increase compared to the emissions anticipated in the 2009 EIR and exceed the applicable thresholds of significance could have a significant effect on regional air quality and the attainment of the federal and State AAQS, and could significantly contribute to increases of GHG emissions that are associated with global climate change. Where new or more severe potentially significant air quality, GHG emissions, and energy impacts are identified, mitigation measures are identified that would reduce the impact to at or below the level anticipated in the 2009 EIR.

Construction Criteria Pollutants and GHG Emissions

The 2009 EIR estimated construction emissions using the URBEMIS2002 model, which is now obsolete. Therefore, in order to determine whether construction of the proposed project would result in new or substantially more severe significant impacts as compared to what was identified for the approved project in the 2009 EIR, construction emissions have been estimated for both the Baseline Conditions and Proposed Project scenarios using the web-based California

³⁷ See Michael H. Remy et al. *Guide to CEQA, 11th Edition*. Point Arena: Solano Press Books (2007), pg. 207; Stephen L. Kostka and Michael H. Zischke. *Practice Under the Environmental Quality Act, Second Edition* (Vol. 1). Oakland: Continuing Education of the Bar (2018), pgs. 12-32; *Benton v. Board of Supervisors* (1st Dist. 1991) 226 Cal. App. 3d 1467.



Emissions Estimator Model (CalEEMod) Version 2022, which is the most up-to-date statewide industry standard 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; however, where project-specific data was available, such data was input into the model (e.g., construction phases and timing, inherent site or project design features, compliance with applicable regulations, etc.).

The following construction-related inherent design features and project-specific information were included in the modeling conducted for the Baseline Conditions Scenario:

- Construction would begin in April 2026, and occur over approximately two years; and
- Approximately 21,700 square feet (sf) of building materials associated with existing on-site development would be demolished and removed from the site.

The following construction-related inherent design features and project-specific information were included in the modeling conducted for the Proposed Project Scenario:

- Construction would begin in April 2026, and occur over approximately three years;
- Approximately 21,700 sf of building materials associated with existing on-site development would be demolished and removed from the site; and
- A total of 10,000 cubic yards (CY) of soil would be exported from the project site during site preparation activities, and a total of 63,800 CY of soil would be imported to the site during grading activities in order to facilitate the proposed drainage system for the project, whereby the site would be graded to direct stormwater runoff to the northerly portion of the site where the detention basin would be located.

The net change in construction emissions that would occur as a result of the Proposed Project Scenario in comparison to the Baseline Conditions Scenario were compared to the standards of significance discussed above in order to determine the associated level of impact. Results of the modeling are expressed in tons/yr for ROG and NO_x emissions, lbs/day for PM₁₀ emissions, and MTCO₂e/yr for GHG emissions, which allows for comparison between the model results and the thresholds of significance. All CalEEMod modeling results are included in Appendix C to this EIR.

Operational Criteria Pollutants and GHG Emissions

Similarly, the 2009 EIR estimated operational emissions using the URBEMIS2002 model, which is now obsolete. Therefore, in order to determine whether operation of the proposed project would result in new or substantially more severe significant impacts as compared to what was identified for the approved project in the 2009 EIR, operational emissions have been estimated for both the Baseline Conditions and Proposed Project scenarios using the web-based CalEEMod, Version 2022, which is the most up-to-date statewide industry standard model.

Based on the modeling, the Baseline Conditions Scenario was assumed to be fully operational by the year 2028, while the Proposed Project Scenario was assumed to be fully operational by the year 2029. The modeling performed for both scenarios included compliance with the latest Building Energy Efficiency Standards Code. Compliance with such would be verified as part of the City's building permit application review process. In addition, Fehr & Peers provided specific trip generation rates and VMT for the land uses that would be developed under the Baseline Conditions Scenario and the Proposed Project Scenario, which were applied to the project modeling. Finally, based on project-specific data provided by the project applicant, 50 percent of



the energy demand associated with the Proposed Project Scenario would be generated by on-site renewable sources.

The net change in operational emissions that would occur as a result of the Proposed Project Scenario in comparison to the Baseline Conditions Scenario were compared to the standards of significance discussed above in order to determine the associated level of impact. Results of the modeling are expressed in tons/yr for ROG and NO_x emissions and lbs/day for PM₁₀ emissions, which allows for comparison between the model results and the thresholds of significance. In addition, while the thresholds of significance for operational GHG emissions are qualitative, operational GHG emissions are presented herein to determine whether the Proposed Project Scenario would result increased on-site operational emissions relative to the Baseline Conditions Scenario, and are expressed in MTCO₂e/yr. All CalEEMod modeling results are included in Appendix C 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 GHG impacts is included under the Cumulative Impacts and Mitigation Measures section below.

4.2-1 Conflict with or obstruct implementation of the applicable air quality plan during project construction. Based on the analysis below, the currently proposed project would not result in a new significant impact or substantially more severe significant impact beyond what was previously identified in the 2009 EIR.

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 PM₁₀ emissions. As construction of the proposed project would generate emissions of criteria air pollutants, including ROG, NO_x, and PM₁₀ 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.

The Wildhorse Ranch Project was determined to be below the applicable YSAQMD thresholds for ROG and NO_x during construction (see Table 4.4-4 of the 2009 EIR). However, PM₁₀ emissions were determined to exceed the applicable YSAQMD threshold during construction. The 2009 EIR included Mitigation Measure 4.4-1, which required preparation and implementation of a dust control plan to reduce PM₁₀ emissions. Implementation of Mitigation Measure 4.4-1 was determined to reduce PM₁₀ emissions to below the applicable YSAQMD thresholds of significance, and, therefore, with implementation of Mitigation Measure 4.4-1, the 2009 EIR determined that the



project would result in a less-than-significant impact associated with construction-related criteria pollutant emissions.

As described in the Method of Analysis section above, the 2009 EIR estimated construction emissions using the URBEMIS2002 model, which is now obsolete. Therefore, in order to determine whether construction of the proposed project would result in new or substantially more severe significant impacts as compared to what was identified for the approved project in the 2009 EIR, emissions have been estimated for both the Baseline Conditions and Proposed Project scenarios using CalEEMod. The maximum (i.e., worst-case) unmitigated construction emissions associated with the aforementioned scenarios are presented in Table 4.2-9.

Regulations pertaining to air quality emissions, including, but not limited to, State and federal vehicle standards, are much more stringent than the regulations in place at the time the 2009 EIR was drafted. Such regulations have been taken into account within the most current version of the CalEEMod software. Therefore, as presented in Table 4.2-9, construction-related ROG, NO_x, and PM₁₀ emissions associated with the Baseline Conditions Scenario, as estimated using the CalEEMod software, are now estimated to be below the applicable YSAQMD thresholds of significance. Implementation of the Proposed Project Scenario would result in a decrease in construction-related ROG emissions and an increase in NO_x and PM₁₀ emissions, as compared to the Baseline Conditions Scenario. Nonetheless, the total construction-related emissions associated with the Proposed Project Scenario would be below the applicable YSAQMD thresholds of significance for all criteria pollutants.

Table 4.2-9 Maximum Unmitigated Construction Emissions			
	ROG (tons/yr)	NO_x (tons/yr)	PM₁₀ (lbs/day)
Baseline Conditions Scenario	0.83	1.73	11.3
Proposed Project Scenario	0.60	2.76	11.7
<i>Net Change</i>	-0.23	+1.03	+0.40
YSAQMD Threshold of Significance	10.00	10.00	80.00
Exceeds Threshold?	NO	NO	NO
<i>Source: CalEEMod, March 2024 (see Appendix C).</i>			

Given that construction-related PM₁₀ emissions associated with both the Baseline Conditions Scenario and the Proposed Project Scenario, as estimated using the most current version of the CalEEMod software, are below the applicable YSAQMD threshold of significance, Mitigation Measure 4.4-1 included in the 2009 EIR, which required preparation and implementation of a dust control plan to reduce PM₁₀ emissions, would no longer be applicable to the proposed project. However, the proposed project would still be required to comply with all YSAQMD requirements for dust control.

Furthermore, while all projects within the YSAQMD, including the proposed project, are required to comply with all YSAQMD rules and regulations for construction, including Rule 2.1 (Control of Emissions), Rule 2.28 (Cutback and Emulsified



Asphalts), Rule 2.5 (Nuisance), Rule 2.14 (Architectural Coatings), and Rule 2.11 (Particulate Matter Concentration), the proposed project was modeled without the inclusion of such rules and regulations to provide a conservative, worst-case emissions scenario. Even under the conservative assumptions used for this analysis, emissions of PM₁₀ would remain below the YSAQMD's thresholds of significance.

The YSAQMD also encourages all projects to implement best management practices (BMPs) to reduce dust emissions and avoid localized health impacts. The YSAQMD's BMPs for dust include, but are not necessarily limited to, the following:

- Watering of all active construction sites at least twice daily;
- Maintenance of at least two feet of freeboard in haul trucks;
- Covering of all trucks hauling dirt, sand, or loose materials;
- Application of non-toxic binders to exposed areas after cut and fill operations and hydroseeding of area, as applicable and/or necessary;
- Application of chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days), as applicable and/or necessary;
- Planting of vegetative ground cover in disturbed areas as soon as possible;
- Covering of inactive storage piles;
- Sweeping of streets if visible soil material is carried out from the construction site; and
- Treatment of accesses to distance of 100 feet from the paved road with a six- to 12-inch layer of wood chips, mulch, or gravel.

Compliance with the aforementioned rules and regulations related to construction, as well as implementation of BMPs for dust, would help to further reduce emissions generated during construction activities.

Based on the above, the proposed project would not result in a new significant impact or substantially more severe significant impact related to contributing to the region's nonattainment status for ozone or PM or obstructing implementation of an applicable air quality plan during construction beyond what was previously identified in the 2009 EIR.

Applicable Mitigation Measure(s) from the 2009 EIR

As discussed above and shown in Table 4.2-9, under both the Baseline Conditions Scenario and the Proposed Project scenario, PM₁₀ emissions would be below the YSAQMD threshold of significance. Therefore, Mitigation Measure 4.4-1 included in the 2009 EIR would no longer be applicable to the proposed project.

Modified Mitigation Measure(s)

None required.

New Mitigation Measure(s)

None required.



4.2-2 Conflict with or obstruct implementation of the applicable air quality plan during project operation. Based on the analysis below, the currently proposed project would not result in a new significant impact or substantially more severe significant impact beyond what was previously identified in the 2009 EIR.

Due to the nonattainment designations of the area, the YSAQMD has developed plans to attain the State and federal standards for ozone and PM. The currently applicable air quality plan is the Ozone Attainment Plan. Adopted YSAQMD 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 YSAQMD's mass emissions thresholds for operational emissions of ROG, NO_x, or PM₁₀, a project would be considered to conflict with or obstruct implementation of the YSAQMD's air quality planning efforts.

Emissions of ROG, NO_x, and PM₁₀ would be generated during operations of the proposed project from both mobile and stationary 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.). 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 from Fehr & Peers were applied to the project modeling.

The Wildhorse Ranch Project was determined to result in operational emissions below the applicable YSAQMD thresholds for ROG, NO_x, and PM₁₀ (see Table 4.4-5 of the 2009 EIR). Therefore, the 2009 EIR concluded that the Wildhorse Ranch Project would result in a less-than-significant impact related to operational criteria pollutant emissions.

As described in the Method of Analysis section above, the 2009 EIR estimated construction emissions using the URBEMIS2002 model, which is now obsolete. Therefore, in order to determine whether operation of the proposed project would result in new or substantially more severe significant impacts as compared to what was identified for the approved project in the 2009 EIR, emissions have been estimated for both the Baseline Conditions and Proposed Project scenarios using CalEEMod. The maximum unmitigated operational emissions associated with the aforementioned scenarios are presented in Table 4.2-10.

As demonstrated in Table 4.2-10, the Proposed Project Scenario would result in a net increase in operational emissions of NO_x and a net decrease in operational emissions of ROG and PM₁₀, as compared to the Baseline Conditions Scenario. Operational emissions of ROG, NO_x, and PM₁₀ associated with the Proposed Project Scenario would be below the applicable YSAQMD thresholds of significance.



Table 4.2-10 Maximum Unmitigated Operational Emissions			
	ROG (tons/yr)	NO_x (tons/yr)	PM₁₀ (lbs/day)
Baseline Conditions Scenario	2.98	2.06	17.7
Proposed Project Scenario	1.12	2.23	11.3
<i>Net Change</i>	<i>-1.86</i>	<i>+0.17</i>	<i>-6.4</i>
YSAQMD Threshold of Significance	10.00	10.00	80.00
Exceeds Threshold?	NO	NO	NO
<i>Source: CalEEMod, March 2024 (see Appendix C).</i>			

Based on the above, the proposed project would not result in a new significant impact or substantially more severe significant impact related to contributing to the region's nonattainment status for ozone or PM or obstructing implementation of an applicable air quality plan during operations beyond what was previously identified in the 2009 EIR.

Applicable Mitigation Measure(s) from the 2009 EIR

None applicable.

Modified Mitigation Measure(s)

None required.

New Mitigation Measure(s)

None required.

4.2-3 Expose sensitive receptors to substantial pollutant concentrations. Based on the analysis below, the currently proposed project would not result in a new significant impact or substantially more severe significant impact beyond what was previously identified in the 2009 EIR.

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

Localized CO Emissions

Emissions of CO result from the incomplete combustion of carbon-containing fuels such as gasoline or wood and are particularly related to traffic levels. Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. As older, more polluting vehicles are retired and replaced with newer, cleaner vehicles, the overall rate of emission of CO for vehicle fleets throughout the State has been and is expected to continue to decrease.

Localized CO emissions were analyzed under Impact 4.4-3 of the 2009 EIR. As discussed therein, and presented in Table 4.4-6 of the 2009 EIR, development of the Wildhorse Ranch Project was determined to increase CO concentrations at



intersections in the project area; however, the concentrations were determined to remain below the AAQS in place at the time for localized CO emissions. Therefore, project impacts related to local CO concentrations were determined to be less than significant.

As discussed in the Method of Analysis section above, considering that the law has changed with respect to how transportation-related impacts may be addressed under CEQA, such that unacceptable LOS is no longer considered a significant impact on the environment under CEQA, the analysis herein uses guidance from the nearby SMAQMD and PCAPCD, which both have jurisdiction over a portion of the SVAB and are adjacent to the YSAQMD.

According to the SMAQMD's CEQA Guide, emissions of CO are generally of less concern than other criteria pollutants, as operational activities are not likely to generate substantial quantities of CO, and the SVAB has been in attainment for CO for multiple years. Thus, SMAQMD no longer recommends an analysis of localized CO emissions.

The PCAPCD has a numerical screening level for localized CO impacts. According to the PCAPCD screening levels, a project could result in a significant impact if the project would result in CO emissions from vehicle operations in excess of 550 lbs/day. According to the modeling performed for the proposed project, the Proposed Project Scenario would result in maximum unmitigated operational mobile source CO emissions of 89.4 lbs/day, which is a reduction of 11.6 lbs/day as compared to the 101 lbs/day of operational mobile source CO emissions that would be generated by the Approved Conditions Scenario (see Appendix C). Consequently, CO emissions related to mobile sources associated with operation of the proposed project would be below the 550 lbs/day screening threshold used by PCAPCD, and, 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 or expose sensitive receptors to substantial concentrations of localized CO.

Based on the above, the proposed project would not result in new significant impacts or substantially more severe significant impacts related to localized CO concentrations.

TAC Emissions

Another category of environmental concern is TACs. Health risks associated with TACs are a function of both the concentration of emissions and the duration of exposure, where the higher the concentration and/or the longer the period of time that a sensitive receptor is exposed to pollutant concentrations would correlate to a higher health risk. The CARB's Handbook provides recommended setback distances for sensitive land uses from major sources of TACs, including, but not limited to, freeways and high traffic roads, gas dispensing facilities (GDFs), chrome plating operations, distribution centers, and rail yards. 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.



The 2009 EIR noted that diesel-powered vehicles and equipment used during the construction of the Wildhorse Ranch Project would generate TACs; however, because the YSAQMD does not have permitting authority over mobile sources of TACs, and a standard of significance had not been established for mobile source emissions of TACs, further discussion of construction-related TACs was not included in the 2009 EIR. An analysis of operational TAC emissions was not included in the 2009 EIR. Therefore, the analysis herein is focused on the potential for any new significant impacts to occur associated with TAC emissions generated by the proposed project.

Operational-related emissions of TACs are typically associated with stationary diesel engines or land uses that involve heavy truck traffic or idling. The proposed land uses would not involve long-term or frequent operations of any stationary diesel engines and would not involve heavy truck traffic or idling. Thus, the proposed project would not expose sensitive receptors to substantial concentrations of DPM during operations.

Impacts of the environment on a project (as opposed to impacts of a project on the environment) are beyond the scope of required CEQA review.³⁸ The analysis under CEQA is focused on the proposed project's effects on the surrounding physical environment. Therefore, the following analysis does not consider exposure of future on-site residents to potential TAC emissions, as such an analysis is not required pursuant to CEQA.

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 three-year period. In addition, 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.

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

³⁸ “[T]he purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project.” (*Ballona Wetlands Land Trust v. Town of Los Angeles*, (2011) 201 Cal.App.4th 455, 473 (Ballona).) The California Supreme Court held that “CEQA does not generally require an agency to consider the effects of existing environmental conditions on a proposed project’s future users or residents. What CEQA does mandate... is an analysis of how a project might exacerbate existing environmental hazards.” (*California Building Industry Assn. v. Bay Area Air Quality Management Dist.* (2015) 62 Cal.4th 369, 392; see also *Mission Bay Alliance v. Office of Community Investment & Infrastructure* (2016) 6 Cal.App.5th 160, 197 [“identifying the effects on the project and its users of locating the project in a particular environmental setting is neither consistent with CEQA’s legislative purpose nor required by the CEQA statutes”], quoting *Ballona*, *supra*, 201 Cal.App.4th at p. 474.)



standards relating to fleet average emissions and the use of Best Available Control Technologies.

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 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.

Furthermore, as discussed above, the proposed project's construction-related emissions would be below the applicable mass emissions thresholds of significance for PM₁₀. According to CARB, more than 90 percent of DPM is less than one micrometer in diameter,³⁹ and, thus, DPM is a subset of PM_{2.5}, which comprises a portion of PM₁₀. As a California statewide average, DPM comprises about eight percent of PM_{2.5} in outdoor air,⁴⁰ and would represent an even smaller percentage of PM₁₀ emissions. Considering that the proposed project's construction-related PM₁₀ emissions, which include emissions of DPM, would be below the YSAQMD'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.

Based on the above, the proposed project would not expose sensitive receptors to substantial concentrations of DPM during construction.

Criteria Pollutants

As discussed in the Existing Environmental Setting section and summarized in Table 4.2-1, criteria pollutant emissions can cause negative health effects. With regard to the proposed project, the principal criteria pollutants of concern are localized CO, ozone, and PM. The proposed project is not anticipated to result in impacts related to localized exposure of sensitive receptors to substantial concentrations of CO. Unlike CO and many TACs, due to atmospheric chemistry and dynamics, ozone and atmospheric PM typically act to impact public health on a cumulative and regional level, rather than a localized level. Due to the cumulative and regional nature of effects from criteria pollutants, the analysis of potential health effects of criteria pollutants is further discussed in Impact 4.2-6.

Conclusion

The proposed project would not cause any substantial levels of localized CO concentrations or other TACs. Thus, the proposed project would not result in a new significant impact or a substantially more severe significant impact beyond what was previously identified in the 2009 EIR.

³⁹ California Air Resources Board. *Inhalable Particulate Matter and Health (PM_{2.5} and PM₁₀)*. Available at: <https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health>. Accessed March 2024.

⁴⁰ California Air Resources Board. *Overview: Diesel Exhaust & Health*. Available at: <https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health>. Accessed March 2024.



Applicable Mitigation Measure(s) from the 2009 EIR

None applicable.

Modified Mitigation Measure(s)

None required.

New Mitigation Measure(s)

None required.

4.2-4 Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. Based on the analysis below, the currently proposed project would not result in a new significant impact or substantially more severe significant impact beyond what was previously identified in the 2009 EIR.

Pollutants of principal concern include emissions leading to odors, emissions that have the potential to cause dust, or emissions considered to constitute air pollutants. Air pollutants have been discussed in Impacts 4.3-1 through 4.3-3 above. Therefore, the following discussion focuses on emissions of odors and dust.

It should be noted that an analysis of other emissions such as odors and dust was not explicitly included in the 2009 EIR. Therefore, the analysis herein is focused on the potential for any new significant impacts to occur associated with odor and dust emissions generated by the proposed project.

Odors

As discussed above, due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, quantitative analysis to determine the presence of a significant odor impact is difficult. According to the YSAQMD, common types of facilities that are known to produce odors include, but are not limited to, wastewater treatment facilities, chemical or fiberglass manufacturing, landfills, composting facilities, food processing facilities, refineries, dairies, and asphalt or rendering plants.⁴¹ The proposed project is not located in the vicinity of any such existing or planned land uses, and would not introduce any uses that would be expected to create objectionable odors that would affect a substantial number of people.

Construction activities often include diesel-fueled equipment and heavy-duty trucks, which could create odors associated with diesel fumes that may be considered objectionable. However, construction activities would be temporary, and operation of construction equipment would be regulated in accordance with the In-Use Off-Road Diesel Vehicle Regulation, as discussed above. In addition, as required by Mitigation Measure 4.5-3 of the 2009 EIR, construction activities would be limited to normal daytime working hours (i.e., 7:00 AM to 7:00 PM Monday through Friday and 8:00 AM

⁴¹ Yolo-Solano Air Quality Management District. *Handbook for Assessing and Mitigating Air Quality Impacts* [pg. 14]. July 11, 2007.



to 8:00 PM Saturday and Sunday). The proposed project would also be required to comply with all applicable YSAQMD rules and regulations, including, but not limited to, Rule 2.1, Rule 2.28, and Rule 2.5, which would help to control construction-related odorous emissions. Considering the size of the development area, construction equipment would operate at various locations throughout the project site intermittently, and the distances from the nearest sensitive receptors would allow for dispersal of diesel odors. Accordingly, substantial objectionable odors would not be expected to occur during construction activities.

The YSAQMD also regulates objectionable odors through Rule 2.5 (Nuisance), which prohibits any person or source from emitting air contaminants or other material that result in any of the following: cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; endanger the comfort, repose, health, or safety of any such persons or the public; or have a natural tendency to cause injury or damage to business or property. Rule 2.5 is enforced based on complaints. If complaints are received, the YSAQMD is required to investigate the complaint, as well as determine and ensure a solution for the source of the complaint, which could include operational modifications. Thus, although not anticipated, if odor complaints are made after the proposed project is developed, the YSAQMD would ensure that such odors are addressed, and any potential odor effects reduced to less than significant.

Dust

The proposed project is required to comply with all applicable YSAQMD rules and regulations for construction, including, but not limited to, Rule 2.1 (Control of Emissions), Rule 2.5 (Nuisance), and Rule 2.11 (Particulate Matter Concentration). Furthermore, all projects are required to implement the YSAQMD's BMPs for dust, as described in Impact 4.3-1, above. Compliance with YSAQMD rules and regulations and BMPs would help to ensure that dust is minimized during project construction. Following project construction, vehicles operating within the project site would be limited to paved areas of the site, which would not have the potential to create substantial dust emissions. Thus, project operations would not include sources of dust that could adversely affect a substantial number of people.

Conclusion

For the aforementioned reasons, project construction and operations would not result in substantial emissions, such as those leading to odors or dust, which could adversely affect a substantial number of people. Therefore, the proposed project would not result in a new significant impact or a substantially more severe significant impact beyond what was previously identified in the 2009 EIR.

Applicable Mitigation Measure(s) from the 2009 EIR

None applicable.

Modified Mitigation Measure(s)

None required.

New Mitigation Measure(s)

None required.



4.2-5 Result in the inefficient or wasteful use of energy, or conflict with a State or local plan for renewable energy or energy efficiency. Based on the analysis below, the currently proposed project would not result in a new significant impact or substantially more severe significant impact beyond what was previously identified in the 2009 EIR.

Because Appendix G of the CEQA Guidelines did not previously include a specific section on energy, the 2009 EIR did not include a specific analysis of the Wildhorse Ranch Project's potential energy-related impacts; however, as efficient use of energy was included in Appendix F of the CEQA Guidelines, the issue was still considered in the evaluation of the Wildhorse Ranch Project. Specifically, Section 4.10, Climate Change, of the 2009 EIR included a list of energy efficiency measures in place at the time with which the Wildhorse Ranch Project would be required to comply. Furthermore, the 2009 EIR noted that implementation of such energy efficiency measures would reduce energy use well below the Title 24 standards in place at the time the 2009 EIR was prepared.

Regulations pertaining to energy use, including, but not limited to, State and federal vehicle standards and Building Energy Efficiency Standards, are more stringent than the regulations in place at the time the 2009 EIR was adopted. As a result, energy use associated with the proposed project would likely be reduced from what was anticipated for the Wildhorse Ranch Project.

The following discussion includes an analysis of energy use associated with construction of the proposed project, as well as building energy use and transportation energy use associated with operations of the proposed project, as compared to current regulations pertaining to energy use.

Construction Energy Use

Construction of the proposed project would involve increased energy demand and consumption related to use of oil in the form of gasoline and diesel fuel for construction worker vehicle trips, hauling and materials delivery truck trips, and operation of off-road construction equipment. In addition, diesel-fueled portable generators may be necessary to provide additional electricity demands for temporary lighting, welding, and for supplying energy to areas of the site where energy supply cannot be met through a hookup to the existing electricity grid; however, grid power would be used as opposed to diesel generators, where feasible.

Typically, at construction sites, electricity from the existing grid is used to power portable and temporary lights or office trailers. Because grid electricity would be used primarily for steady sources such as lighting, not sudden, intermittent sources such as welding or other hand-held tools, the increase in electricity usage at the site during construction would not be expected to cause any substantial peaks in demand. Construction of the proposed project, which would result in temporary increases in electricity demand, would not cause a permanent or substantial increase in demand that would exceed PG&E's demand projections or exceed the ability of PG&E's existing infrastructure to handle such an increase. Therefore, project construction would not result in any significant impacts on local or regional electricity supplies, the



need for additional capacity, or on peak or base period electricity demands. In addition, standards or regulations specific to construction-related electricity usage do not currently exist.

Even during the most intense period of construction, due to the different types of construction activities (e.g., site preparation, grading, building construction), only portions of the project site would be disturbed at a time, with operation of construction equipment occurring at different locations on the project site, rather than a single location. In addition, all construction equipment and operation thereof would be regulated pursuant to the CARB In-Use Off-Road Diesel Vehicle Regulation. The In-Use Off-Road Diesel Vehicle Regulation is intended to reduce emissions from in-use, off-road, heavy-duty diesel vehicles in California by imposing a five-minute limit on idling, requiring all vehicles to be reported to CARB, restricting the addition of older vehicles into fleets, and requiring fleets to reduce emissions by retiring, replacing, or repowering older engines, or installing exhaust retrofits. Furthermore, as a means of reducing emissions, construction vehicles are required to become cleaner through the use of renewable energy resources. Engine tiers are used to describe the emissions intensity and efficiency of an engine. Construction equipment with Tier 0 or Tier 1 engines are the least efficient, and Tier 4 is the most efficient. In November 2021, the CARB began developing standards for Tier 5 engines. All fleets are currently prohibited from adding Tier 0, Tier 1, or Tier 2 vehicles to the fleet. In addition, starting January 1, 2024, fleets with a total horsepower over 2,501, excluding non-profit training centers, may not add any Tier 3 or Tier 4 Interim vehicles.⁴² The In-Use Off-Road Diesel Vehicle Regulation would, therefore, help to improve fuel efficiency for equipment used in construction of the proposed project.

The CARB enforces off-road equipment regulations through their reporting system, Diesel Off-road Online Reporting System (DOORS). Each construction fleet is required to update their DOORS account within 30 days of buying or selling a vehicle, and DOORS automatically calculates the fleet average index for each fleet. The fleet average index is an indicator of a fleet's overall emission rate, and is based on each vehicle's engine horsepower and model year, and whether it is equipped with a Verified Diesel Emission Control Strategy (VDECS). If a fleet cannot, or does not want to, meet the fleet average target in a given year, the fleet may instead choose to comply with the Best Available Control Technology (BACT) requirements. A fleet may meet the BACT requirements each year by turning over or installing VDECS on a certain percentage of its total fleet horsepower. 'Turnover' means retiring a vehicle, designating a vehicle as permanent low-use (a vehicle used less than 200 hours per year), repowering a vehicle with a higher tier engine, or rebuilding the engine to a more stringent emission standard. By each compliance date (annually on January 1st), the fleet must either show that its fleet average index was less than or equal to the calculated fleet average target rate, or that the fleet has met the BACT requirements.⁴³ The project would be required to comply with such regulations, which would ensure that construction equipment meets all State efficiency requirements.

⁴² California Air Resources Board. Amendments to the In-Use Off-Road Diesel-Fueled Fleets Regulation. August 29, 2023.

⁴³ California Air Resources Board. *Frequently Asked Questions, Regulation for In-Use Off-Road Diesel-Fueled Fleets (Off-Road Regulation)*. August 2014.



Technological innovations and more stringent standards are being researched, such as multi-function equipment, hybrid equipment, or other design changes, which could help to further reduce demand on oil and limit emissions associated with construction. Over time, as technology progresses and more stringent emissions standards are put in place, construction equipment engines become increasingly efficient. Project construction would also be required to comply with all applicable YSAQMD rules and regulations, which are indirectly related to energy efficiency, which would help to further reduce energy use associated with the proposed project.

Based on the above, the temporary increase in energy use occurring during construction of the proposed project would not result in a significant increase in peak or base demands or require additional capacity from local or regional energy supplies. In addition, the proposed project would be required to comply with all applicable regulations related to energy conservation and fuel efficiency, which would help to reduce the temporary increase in demand.

Building Energy Demand

The proposed project would include development of residential and recreational uses. Energy use associated with operation of the proposed project would be typical of such uses, requiring electricity for interior and exterior building lighting, HVAC systems, electronic equipment, machinery, refrigeration, appliances, security systems, and more. Maintenance activities during operations, such as landscape maintenance, would involve the use of electric or gas-powered equipment.

The proposed project is required to comply with all applicable standards and regulations regarding energy conservation and fuel efficiency, including the CBSC and CARB standards, which would ensure that the future uses would be designed to be energy efficient to the maximum extent practicable. Adherence to the most recent CALGreen Code and the Building Energy Efficiency Standards would ensure that the proposed development on-site would consume energy efficiently through the incorporation of such features as efficient water heating systems, high performance attics and walls, and high efficacy lighting. As required by Section 8.01.090 of the Municipal Code, the proposed project would comply with Tier 1 standards of the CALGreen Code, which would otherwise be voluntary under the CBSC. The proposed project would also be subject to the requirements included in Sections 8.01.060, 8.01.100, and 8.01.110 of the Municipal Code, and all applicable CAAP measures related to energy demand, as discussed in the Regulatory Context section, above. In addition, the 2022 CBSC has begun phasing in the provision of zero net energy by requiring residential projects to meet 100 percent of their electricity needs through rooftop solar. Therefore, residential development associated with the proposed project would include rooftop solar to meet 100 percent of each project's electricity demand. The 2022 Building Energy Efficiency Standards also requires that newly constructed non-residential buildings, including grocery stores, offices, financial institutions, unleased tenant space, retail space, schools, warehouses, auditoriums, convention centers, hotel/motels, libraries, medical office building/clinics, and theaters, be developed to include a solar PV system. Therefore, approximately 50 percent of the electricity demand associated with the non-residential development of the proposed project would be met by on-site renewable energy.



State regulations promote the generation of renewable energy and encourage energy efficiency through requirements placed on utility providers and strict development standards. For instance, the RPS requires utilities, including PG&E and VCE, to procure an increasing proportion of electricity from renewable sources. Ultimately the RPS requirements mandate that all electricity produced within the State be renewably sourced by the year 2045.

Based on the air quality modeling prepared for the proposed project, and after taking into consideration on-site renewable energy generation, the proposed project is anticipated to result in a total electricity consumption of approximately 0.25 GWh annually during operations. Compared to the electricity consumption for all of Yolo County, the proposed project's contribution would represent a 0.01 percent increase in electricity demand as compared to current conditions. Although the project would increase electricity demand in the project area, the increased demand is not anticipated to conflict with PG&E's or VCE's ability to meet the RPS requirements or exceed PG&E's or VCE's capacity such that the proposed project's energy demands would not be met. It should also be noted that the proposed residential units would not include the use of natural gas.

Increased energy does not necessarily mean that a project would have an impact related to energy resources. Based on Appendix F of the CEQA Guidelines, a proposed project would result in an impact related to energy resources if a project would result in the inefficient use or waste of energy. As stated above, the proposed project would be required to comply with the efficiency standards set forth in the CBSC, CALGreen Code, Building Energy Efficiency Standards, CARB, the City's Municipal Code, and the City's CAAP, and the proposed project would not conflict or obstruct with any State or local plans related to renewable energy.

With regard to landscaping and maintenance equipment, AB 1346 requires all new small off-road engines sold after January 1, 2024 to be all-electric. By the time the project is operational, a reasonable assumption can be made that at least a portion of the landscaping and maintenance equipment that would be used on-site would be electric. Given that electricity from PG&E and VCE is partially generated from renewable sources, the use of electric landscaping and maintenance equipment would be considered more energy efficient than diesel- or gas-powered landscaping and maintenance equipment.

Transportation Energy Demand

In addition to on-site energy use, the proposed project would result in transportation energy use associated with vehicle trips generated by residents and visitors travelling to and from the project site.

The average fuel economy for the U.S. passenger vehicle fleet was 24.8 miles per gallon (mpg) in 2022, the most recent year such data is available.⁴⁴ In addition, petroleum refineries in the U.S. typically produce approximately 20 gallons of gasoline from one 42-gallon barrel of crude oil. Using an average of 24.8 mpg and an annual

⁴⁴ U.S. Energy Information Administration. *Total Energy, Table 1.8 Motor Vehicle Mileage, Fuel Consumption, and Fuel Economy*. Available at: <https://www.eia.gov/totalenergy/data/browser/?tbl=T01.08#/?f=A&start=200001>. Accessed March 2024.



VMT of approximately 5,679,857,⁴⁵ the project would result in the consumption of approximately 11,487 barrels of crude oil a year, which is a reduction of 10,660 barrels as compared to the 22,147⁴⁶ barrels of crude oil a year that would be consumed under buildout of the Wildhorse Ranch Project. California is estimated to consume approximately 605 million barrels of petroleum per year.⁴⁷ Based on the annual consumption within the State, vehicle trips generated by the proposed project would result in a 0.002 percent increase in the State's current consumption of gasoline, a decrease as compared to the 0.004 percent increase that would be associated with the Wildhorse Ranch Project.

The calculation above is likely an overestimate, as the estimate does not account for the increasing ownership of EVs. California leads the nation in registered alternatively fueled and hybrid vehicles. In fact, under SB 500, the State has required that, starting in the year 2030, all cars sold shall be zero-emission/EVs. In addition, State-specific regulations encourage fuel efficiency and reduction of dependence on oil. Improvements in vehicle efficiency and fuel economy standards help to reduce consumption of gasoline and reduce the State's dependence on petroleum products. The 2022 CBSC and Section 8.01.110 of the City of Davis Municipal Code also require new developments to include the necessary electrical infrastructure for EV charging stations. Based on the above, the actual consumption of gasoline associated with the proposed project is anticipated to be even lower than the 0.001 percent statewide contribution noted above.

The proposed project would be required to comply with all applicable regulations associated with vehicle efficiency and fuel economy. In addition, signage and traffic-calming measures would be incorporated as part of the proposed project to improve mode-share safety on internal roadways used by bicyclists. From the internal street network, bicyclists would have access to an existing Class II bicycle lane located along the eastbound lane of East Covell Boulevard, as well as the grade-separated crossing of East Covell Boulevard to the southeast of the project site. With respect to pedestrian facilities, the proposed project would include new sidewalks along the internal grid street network within the project site. Additionally, the proposed project would include open space trail connections to the existing Wildhorse Agricultural Buffer to the east of the project site and the Wildhorse neighborhood to the west. Such improvements would provide pedestrian and bicycle connectivity within the project site and adjacent areas, thereby helping to discourage driving and reduce vehicle trips and associated transportation energy demand.

Conclusion

Based on the above, the proposed project would not be considered to result in a wasteful, inefficient, or unnecessary use of energy, and the proposed project is not anticipated to conflict with a State or local plan for renewable energy or energy

⁴⁵ The annual VMT estimate presented herein is based on the Transportation Impact Study prepared for the proposed project by Fehr & Peers.

⁴⁶ Estimated using the annual VMT estimate for the Wildhorse Ranch Project of 10,985,150, as provided by Fehr & Peers.

⁴⁷ U.S. Energy Information Administration. *California: State Profile and Energy Estimates*. Available at: https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_fuel/html/fuel_use_pa.html&sid=US&sid=CA. Accessed March 2024.



efficiency. Therefore, the proposed project would not result in a new significant impact or a substantially more severe significant impact beyond what was previously identified in the 2009 EIR.

Applicable Mitigation Measure(s) from the 2009 EIR

None applicable.

Modified Mitigation Measure(s)

None required.

New 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 Yolo County and surrounding areas within the portion of the SVAB that is designated nonattainment for ozone and PM₁₀.

Climate change occurs on a global scale, and emissions of GHGs, even from a single project, contribute to the global impact. However, due to the existing regulations within the State, for the purposes of this analysis, the geographic context for the analysis of GHG emissions presented in this SEIR is California.

Finally, a project’s impacts related to energy use may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development projects. The following discussion of energy impacts is based on the implementation of the proposed project in combination with buildout of the adopted City of Davis General Plan. Additional detail regarding the cumulative project setting can be found in Chapter 5, Statutorily Required Sections, of this SEIR.

4.2-6 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 currently proposed project would not result in a new significant cumulative impact or substantially more severe significant cumulative impact beyond what was previously identified in the 2009 EIR.



Impacts related to cumulative criteria pollutant emissions were analyzed under Impact 4.4-4 of the 2009 EIR. As discussed therein, the Wildhorse Ranch Project was not determined to result in a potentially significant impact because the project's estimated operational emissions would not be in excess of the applicable YSAQMD thresholds. In addition, the 2009 EIR determined that the Wildhorse Ranch Project would ultimately result in a less-than-significant impact related to air quality as a result of construction emissions with implementation of Mitigation Measure 4.4-1. Therefore, the Wildhorse Ranch Project's incremental contribution to the long-term cumulative air quality impact was determined to be less than cumulatively considerable.

Buildout of the proposed project would lead to the release of emissions that would contribute to the cumulative regional air quality setting. The following section includes a discussion of the proposed project's contribution to the cumulative operational emissions associated with implementation of the proposed project, and the cumulative health effects of exposure to criteria pollutants, as compared to the Wildhorse Ranch Project.

Cumulative Emissions

The proposed project is within an area currently designated as nonattainment for ozone, PM₁₀, and PM_{2.5}. By nature, air pollution is largely a cumulative impact. Thus, the proposed project, in combination with other proposed and pending projects in the region would significantly contribute to air quality effects within the SVAB, resulting in an overall significant cumulative impact. However, any single project is not sufficient enough in size to, alone, result in nonattainment of AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's incremental impact on air quality would be considered significant. In developing thresholds of significance for air pollutants, YSAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the significance thresholds, as identified by the YSAQMD and shown in Table 4.2-8 above, that project's emissions would be cumulatively considerable, resulting in a significant adverse air quality impact to the region's existing air quality conditions.⁴⁸

Accordingly, if the proposed project would result in an increase of ROG, NO_x, or PM₁₀, in excess of the YSAQMD's cumulative-level emissions threshold, which are equivalent to the YSAQMD's project-level operational emissions thresholds, the project could potentially result in a significant incremental contribution towards cumulative air quality impacts. Similarly, the proposed project's unmitigated cumulative contribution to regional emissions is equivalent to the project's unmitigated emissions, as presented in Table 4.2-9 Table 4.2-10.

As presented in Table 4.2-9, implementation of the Proposed Project Scenario would result in a decrease in construction-related ROG emissions and an increase in NO_x and PM₁₀ emissions, as compared to the Baseline Conditions Scenario. Nonetheless, the total construction-related emissions associated with the Proposed Project

⁴⁸ Yolo-Solano Air Quality Management District. *Handbook for Assessing and Mitigating Air Quality Impacts* [pg. 7]. July 11, 2007.



Scenario would be below the applicable YSAQMD thresholds of significance for all criteria pollutants. Therefore, Mitigation Measure 4.4-1 included in the 2009 EIR, which required preparation and implementation of a dust control plan to reduce PM₁₀ emissions, would not be applicable to the proposed project.

As shown in Table 4.2-10, the Proposed Project Scenario would result in a net increase in operational emissions of NO_x, and net decrease in emissions of ROG and PM₁₀ as compared to the Baseline Conditions Scenario. Operational emissions of all criteria pollutants associated with the Proposed Project Scenario would be below the applicable YSAQMD's thresholds of significance.

Therefore, the proposed project would not result in a new significant impact or substantially more severe significant impact related to a cumulatively considerable net increase of criteria pollutant emissions for which the region is in nonattainment under an applicable federal and State AAQS beyond what was previously identified in the 2009 EIR.

Cumulative Health Effects of Criteria Pollutants

The AAQS presented in Table 4.2-2 are health-based standards designed to ensure safe levels of criteria pollutants that avoid specific adverse health effects. Because the YSAQMD is designated as nonattainment for ozone, PM₁₀, and PM_{2.5}, the YSAQMD, 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 YSAQMD'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. Thus, if a project's criteria pollutant emissions exceed the YSAQMD's mass emission thresholds of significance, a project would be considered to conflict with or obstruct implementation of the YSAQMD'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 standards. However, as noted above, ascertaining cancer risk, or similar measurements of health effects from air pollutants, is very difficult for regional pollutants such as the ozone precursors ROG and NO_x, as there might be scientific limitations on an agency's ability to make the connection between air pollutant emissions and public health consequences in a credible fashion, given limitations in technical methodologies. For example, ozone concentrations depend upon various complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground level ozone concentrations related to the NAAQS and CAAQS, it is not possible to link health risks to the magnitude of emissions exceeding the significance thresholds.

Nonetheless, as discussed in Impacts 4.2-1 and 4.2-2, the proposed project would not result in emissions that exceed the YSAQMD's thresholds of significance during



construction or operations. Consequently, the proposed project would not result in a new significant impact or substantially more severe significant impact related to conflicting with the YSAQMD's adopted attainment plans or inhibit attainment of regional AAQS, and implementation of the proposed project would not contribute towards regional health effects associated with the existing nonattainment status of ozone and PM standards beyond what was previously identified in the 2009 EIR.

Conclusion

Based on the above, the proposed project would not result in a new significant cumulative impact or a substantially more severe significant cumulative impact related to a cumulatively considerable net increase of criteria pollutant emissions for which the region is in nonattainment under an applicable federal and State AAQS, conflicting with the YSAQMD's adopted attainment plans or inhibiting attainment of regional AAQS, or contributing towards regional health effects associated with the existing nonattainment status of ozone and PM standards beyond what was previously identified in the 2009 EIR.

Applicable Mitigation Measure(s) from the 2009 EIR

None applicable.

Modified Mitigation Measure(s)

None required.

New Mitigation Measure(s)

None required.

4.2-7 Generate GHG emissions, either directly or indirectly, that may 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. Based on the analysis below, the currently proposed project would not result in a new significant cumulative impact or substantially more severe significant cumulative impact beyond what was previously identified in the 2009 EIR.

An individual project's GHG emissions are at a micro-scale level relative to global emissions and effects to global climate change; however, an individual project could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. As such, impacts related to emissions of GHG are inherently considered cumulative impacts.

Implementation of the proposed project would cumulatively contribute to increases of GHG emissions that are associated with global climate change. Estimated GHG emissions attributable to future development would be primarily associated with increases of CO₂ and, to a lesser extent, other GHG pollutants, such as CH₄ and N₂O. Sources of GHG emissions include area sources, mobile sources or vehicles, utilities (electricity), water usage, wastewater generation, and the generation of solid waste.



At the time the 2009 EIR was drafted, the City was still in the process of establishing GHG reduction targets for new development projects. As discussed within the 2009 EIR, the City had not yet established a threshold of significance against which the Wildhorse Ranch Project could be evaluated. The 2009 EIR further noted that although the project would implement several design standards to reduce energy use well beyond 2009 Title 24 standards, as well as ensure overall consistency with the GHG reduction measures identified by the California Attorney General at the time, a single project cannot, on its own, feasibly mitigate impacts associated with the large-scale issue of global climate change. Therefore, impacts related to GHG emissions and global climate change were determined to be significant in the 2009 EIR, and Mitigation Measure 4.10-1, which required preparation and implementation of a sustainability plan was required. However, because implementation of Mitigation Measure 4.10-1 would not reduce the impact to a less-than-significant level, the 2009 EIR concluded that the impact would remain significant and unavoidable.

Since the adoption of the 2009 EIR, regulations pertaining to GHG emissions have become more stringent, and methodology and thresholds for evaluating new development projects' GHG emissions have been established. Therefore, as described in the Method of Analysis section above, project-related construction and operational GHG emissions have been estimated for both the Baseline Conditions and Proposed Project scenarios using CalEEMod.

Construction Emissions

Construction-related GHG emissions are a one-time release and are, therefore, not typically expected to generate a significant contribution to global climate change, as global climate change is inherently a cumulative effect that occurs over a long period of time and is quantified on a yearly basis. As discussed above, the City has not specifically adopted goals or thresholds to analyze GHG emissions from construction of proposed projects. As such, the YSAQMD is currently recommending GHG analysis consistent with the SMAQMD adopted thresholds of significance. For construction related GHG emissions, the SMAQMD has adopted a threshold of significance of 1,100 MTCO₂e/yr.

Maximum unmitigated construction-related GHG emissions have been estimated for both the Baseline Conditions and Proposed Project scenarios, as presented in Table 4.2-11, below.

Table 4.2-11	
Maximum Unmitigated Construction GHG Emissions	
	GHG Emissions (MTCO₂e/yr)
Baseline Conditions Scenario	232
Proposed Project Scenario	785
<i>Net Change</i>	+553
Threshold of Significance	1,100
Exceeds Threshold?	NO
<i>Source: CalEEMod, March 2024 (see Appendix C).</i>	

As shown in Table 4.2-11, while the Proposed Project scenario would result in a net increase in construction GHG emissions as compared to the Baseline Conditions



Scenario, the total unmitigated construction GHG emissions would be below the SMAQMD 1,100 MTCO_{2e}/yr threshold of significance (as recommended by YSAQMD). As a result, implementation of the proposed project would not generate GHG emissions, either directly or indirectly, that may 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 GHG during construction.

Based on the above, the proposed project would not result in new significant impacts or substantially more severe significant impacts related to construction GHG emissions as compared to the Wildhorse Ranch Project.

Operational Emissions

As discussed above, the City of Davis has adopted a CAAP, as well as emissions reductions targets and emissions allowances for projects within the City. In March of 2019, the City adopted a resolution declaring a climate change emergency and accelerating the City’s previously identified emissions reductions goal to a new goal of carbon neutrality by the year 2040. In recognition of the City Council’s actions and emissions reductions efforts and policies enacted by the City’s CAAP, for the purposes of this EIR, the proposed project would be considered to have a significant impact if emissions from the Proposed Project Scenario would result in net positive operational emissions as compared to the Baseline Conditions Scenario. Should the project be shown to reach net neutrality compared to the Baseline Conditions Scenario, the project would be considered to provide a proportional share of emissions reductions and would not inhibit attainment of citywide net carbon neutrality by the year 2040, nor would the project conflict with the City’s CAAP.

Maximum unmitigated operational GHG emissions for the first year of operation for the proposed project were estimated as presented in Table 4.2-12.

Table 4.2-12			
Maximum Unmitigated Operational GHG Emissions			
Emission Source	GHG Emissions (MTCO_{2e}/yr)		
	Baseline Conditions Scenario	Proposed Project Scenario	Net Change
Mobile	3,362	2,081	-1,281
Area	2.37	2.38	+0.01
Energy	298	265	-33
Water	13.1	12.7	-0.4
Waste	42.4	68.8	+26.4
Refrigerants	0.31	0.33	+0.02
Total Annual GHG Emissions	3,718	2,430	-1,288
<i>Source: CalEEMod, March 2024 (see Appendix C).</i>			

As shown in the table, the Proposed Project Scenario would result in a net reduction in operational GHG emissions as compared to operational GHG emissions that would be generated under the Baseline Conditions Scenario. Therefore, the project would be considered to provide a proportional share of GHG emissions reductions and would not inhibit attainment of citywide net carbon neutrality by the year 2040. However, in



order to ensure that the proposed project would not conflict with the City's CAAP, the proposed project would be required to implement all applicable GHG emissions reduction actions included in the City's CAAP. The proposed project's consistency with the reduction actions set forth in the CAAP is discussed in further detail below.

City of Davis Climate Action and Adaptation Plan

The primary goal of a CAAP is to provide a plan for reducing GHG emissions. The City of Davis CAAP identifies reduction actions intended to reduce future GHG emissions to 37 percent below 2016 levels by 2030 and set the community on a trajectory toward the 2040 carbon neutrality goal.

The majority of the reduction actions included within the City's CAAP are targeted for implementation at the City-level, and are, therefore, not applicable to the proposed project. For example, under CAAP Action BE.6, the City would establish a carbon mitigation fund to collect voluntary and/or mandatory payments to mitigate local emissions activities, with collected funds used to support a range of local, climate-change-related projects. The proposed project could be subject to the referenced program, should any such program be adopted by the City in the future. However, CAAP Action BE.6, and many of the other measures included in the CAAP, are not directly applicable to the proposed project.⁴⁹

The proposed project would be generally consistent with the remaining CAAP actions that are applicable to the proposed project. Specifically, Action TR.11 aims to increase housing opportunities, including high-density, mixed-use, transit-oriented, and affordable options, to support the jobs/housing balance and decrease VMT within the City. The proposed residential community would be comprised of up to 175 units, including new cottages, half-plex townhomes, single-family residences (medium and large), and multi-family apartments. Pursuant to the City's Affordable Housing Ordinance (Davis Municipal Code Article 18.05) and based upon the proposed mix of residential units and lot sizes, the proposed project is required to provide a minimum of 26 affordable units. The proposed project would include up to 45 affordable units, as the new multi-family apartment units would be deed-restricted. In addition, at least nine existing bus stops are located less than 0.25-mile from the project site along East Covell Boulevard, Monarch Lane, Temple Drive, and Alhambra Drive. The transit stops are served by Unitrans (Lines L, P, and Q) and Yolobus (Routes 42 and 43).

As discussed above, the proposed residential units would not include the use of natural gas and, thus, the proposed project would be consistent with Action BE.4 related to all-electric new construction. All on-site residents would also have the opportunity to

⁴⁹ Additional CAAP actions not applicable to the proposed project include voluntary Actions BE.1 and BE.2 related to existing buildings; actions related to implementation of future policies and programs that have not yet been developed within the City, such as Action BE.3, BE.8, TR.3, TR.4, TR.6, TR.7, TR.9, TR.10, WW.1, AD.1, AD.3, AD.5, CR.1, and CR.2; actions related to implementation of existing City programs not applicable to the proposed project such as Action TR.1, which aims to implement specifically-located EV charging projects, as identified in the City's EV Charging Plan (none of which are located on or near the project site), and Action TR.8, which aims to implement parking improvements in the downtown area; and Actions, such as BE.7, TR.2, AD.4, and AD.6 related to requirements associated with City-owned facilities and transportation fleets or critical public infrastructure such as hospitals. Similar to the future program proposed by Action BE.6, should any program or policy be adopted by the City in the future related to the aforementioned actions, the proposed project could be subject to such requirements, as applicable.



opt into receiving energy from VCE, ensuring that the proposed project would be consistent with Action BE.5.

Several CAAP actions, such as Action TR.5, which is directly applicable to the proposed project, and Citywide actions such as Actions TR.3, TR.4, TR.6, and TR.7, are related to increasing the use of alternative transportation modes within the City. The proposed project would include several improvements to the bicycle and pedestrian network within the City, such as incorporation of signage and traffic-calming measures to improve mode-share safety on internal roadways used by bicyclists, as well as open space trail connections to the existing Wildhorse Agricultural Buffer to the east of the project site and the Wildhorse neighborhood to the west. The aforementioned improvements would facilitate the use of alternative transportation modes within the City. Therefore, the proposed project would be generally consistent with Action TR.5, and, while not directly applicable to the proposed project, would generally be consistent with the goals Citywide Actions TR.3, TR.4, TR.6, and TR.7.

Finally, with regard to Action AD.2, which aims to expand urban forest in parks, greenbelts, and open space with climate-ready species that provide shade, the 0.60-acre Lot D, located along the southern portion of the western site boundary, would include an area for the planting of an urban forest. In addition, the 0.53-acre Lot G, located in the northern portion of the site, would include an area for the planting of an urban forest. The proposed project would also include a 20-foot-wide tree buffer located along the western and northern site boundaries within a private easement for tree plantings. Therefore, the proposed project would be generally consistent with Action AD.2.

It should also be noted that while, as discussed above, several actions included in the CAAP are related to implementation of future citywide policies and programs that have not yet been developed within the City, the proposed project would include several design features that would generally be consistent with the goals of such actions. For example, the proposed project would be built in compliance with the requirements of the CalGreen Tier 1 standards, as required by Section 8.01.090 of the Municipal Code, and would include the provision of on-site renewable energy as well as EV charging infrastructure, generally consistent with the goals of Actions BE.3, TR.10, and AD.1. In addition, the proposed project would integrate Low Impact Development (LID) measures and volume-based BMPs, such as bioretention, infiltration features, and pervious pavement, and flow-based BMPs, such as vegetated swales and stormwater planters throughout the site to provide stormwater quality treatment, consistent with the City of Davis Storm Water Quality Control Standards, generally consistent with the goals of Action AD.3. With regard to on-site landscaping improvements, the project applicant would coordinate with a University of California, Davis (UC Davis) horticulturalist to select a plant palette that includes a mix of native, drought-tolerant, climate-ready, and carbon-capturing qualities associated with the new trees, shrubs, and seasonal grasses, generally consistent with the goals of Action WW.1. Finally, as discussed in Chapter 4.6, Transportation, of this EIR, the proposed project would implement a series of transportation demand management (TDM) strategies, as recommended by the California Air Pollution Control Officers Association (CAPCOA) Handbook for Assessing GHG Emission Reductions, Climate Vulnerabilities, and



Health and Equity (December 2021), to reduce project-generated VMT to the maximum extent feasible, generally consistent with the goals of Action TR.11.

Therefore, implementation of the proposed project would be consistent with the overarching goal of the CAAP, which is to reduce GHG emissions.

Conclusion

Based on the above, the proposed project would not result in a new significant cumulative impact or a substantially more severe significant cumulative impact related to generating GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflicting with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs beyond what was previously identified in the 2009 EIR.

Applicable Mitigation Measure(s) from the 2009 EIR

The 2009 EIR included Mitigation Measure 4.10-1, which required preparation and implementation of a sustainability plan to ensure consistency with EO S-3-05, the Attorney General's suggested global warming mitigation measures, and/or City of Davis Resolution No. 08-166. However, such regulations pertaining to GHG emissions are no longer relevant, as new, more stringent regulations pertaining to GHG emissions have since been adopted (i.e., AB 32, SB 32, EO B-55-18, the City's goal of net carbon neutrality by the year 2040, and the City of Davis CAAP). Thresholds for evaluating new development projects' GHG emissions have also been established since preparation of the 2009 EIR.

As discussed above, total unmitigated construction emissions would be below the SMAQMD 1,100 MTCO₂e/yr threshold of significance. In addition, the Proposed Project Scenario would result in a net reduction in operational GHG emissions as compared to operational GHG emissions that would be generated under the Baseline Conditions Scenario, and implementation of the project would be consistent with the overarching goal of the CAAP, which is to reduce GHG emissions. Therefore, the project would be considered to provide a proportional share of GHG emissions reductions and would not inhibit attainment of citywide net carbon neutrality by the year 2040, nor would the project conflict with the City's CAAP.

As the actions included in the City's CAAP are intended to meet the current, more stringent, GHG regulations, such measures would supersede the measures included in Mitigation Measure 4.10-1 of the 2009 EIR. As such, Mitigation Measure 4.10-1 of the 2009 EIR would no longer be applicable to the proposed project.

Modified Mitigation Measure(s)

None required.

New Mitigation Measure(s)

None required.



4.2-8 Result in a cumulatively considerable inefficient or wasteful use of energy or conflict with a State or local plan for renewable energy or energy efficiency. Based on the analysis below, the currently proposed project would not result in a new significant cumulative impact or substantially more severe significant cumulative impact beyond what was previously identified in the 2009 EIR.

Impact 4.2-5 discusses the proposed project's consumption of energy on a project-level, within the context of existing State plans and regulations, as well as local plans. As discussed previously, the project would involve consumption of diesel, gasoline, and electricity throughout construction and operations. However, all proposed structures would be built in compliance with existing statewide mandatory energy efficiency standards, such as those contained in the California Building Energy Efficiency Standards and the CALGreen Code. Compliance with the energy efficiency standards would reduce the amount of electricity consumed by the proposed development. State regulations would also help to reduce the amount of energy consumed by on-road vehicles over time. For instance, State and federal emissions standards and fuel economy standards result in increased fuel efficiency for on-road vehicles. Overall, as concluded above, the proposed project would not result in a new significant impact or a substantially more severe significant impact related to energy beyond what was previously identified in the 2009 EIR.

Similar to the proposed project, all future development within the City of Davis would be required to comply with applicable State and local regulations related to energy efficiency, including all applicable CAAP measures related to energy demand, as discussed above. Increased efficiency would be ensured in the future as cumulative development occurs due to compliance with the State's robust energy efficiency requirements. For example, the 2022 CBSC has begun phasing in the provision of zero net energy by requiring residential projects to include on-site solar to meet the annual electricity usage of each residence. Cumulative residential development would include on-site solar to meet the annual electricity usage of each project's electricity demand and, pursuant to the 2022 Building Energy Efficiency Standards, newly constructed non-residential buildings, including grocery stores, offices, financial institutions, unleased tenant space, retail space, schools, warehouses, auditoriums, convention centers, hotel/motels, libraries, medical office building/clinics, and theaters are required to install a solar PV system. Furthermore, energy efficiency regulations have been getting progressively more stringent over time. Thus, as cumulative development occurs under the increasingly stringent regulations, the energy use associated with such cumulative development is anticipated to be increasingly energy efficient over time as well.

Based on the above, the proposed project, in combination with other cumulative development in the project region, would not result in a new significant cumulative impact or a substantially more severe significant cumulative impact related to the wasteful or inefficient use of energy beyond what was previously identified in the 2009 EIR.



Applicable Mitigation Measure(s) from the 2009 EIR

None applicable.

Modified Mitigation Measure(s)

None required.

New Mitigation Measure(s)

None required.

