

4.6 GREENHOUSE GAS EMISSIONS AND ENERGY

4.6.1 ENVIRONMENTAL SETTING

OVERVIEW

Certain gases in the Earth’s atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the Earth’s surface temperature. Solar radiation enters the Earth’s atmosphere from space. A portion of the radiation is absorbed by the Earth’s surface, and a smaller portion of this radiation is reflected back toward space through the atmosphere. However, infrared radiation is selectively absorbed by GHGs in the atmosphere. As a result, infrared radiation released from the Earth that otherwise would have escaped back into space is instead “trapped,” resulting in a warming of the atmosphere. This phenomenon, known as the “greenhouse effect,” is responsible for maintaining a habitable climate on Earth. Anthropogenic (e.g., human caused) emissions of GHGs lead to atmospheric levels in excess of natural ambient concentrations and have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change.

The Intergovernmental Panel on Climate Change (IPCC) concluded that variations in natural phenomena, such as solar radiation and volcanoes, produced most of the warming of the Earth from pre-industrial times to 1950. Some variations in natural phenomena also had a small cooling effect. From 1950 to the present, increasing GHG concentrations resulting from human activity, such as fossil fuel burning and deforestation, have been responsible for most of the observed temperature increase (IPCC 2021).

Global surface temperature has increased by approximately 1.96 degrees Fahrenheit (°F) over the last 140 years (IPCC 2021); the likely total human-caused global surface temperature increase is 1.93°F. The rate of increase in global average surface temperature has not been consistent; the last four decades have warmed at a much faster rate per decade (IPCC 2021).

During the same period when increased global warming has occurred, many other changes have occurred in other natural systems. Sea levels have risen; precipitation patterns throughout the world have shifted, with some areas becoming wetter and others drier; snowlines have increased elevation, resulting in changes to the snowpack, runoff, and water storage; and numerous other conditions have been observed. Although it is difficult to prove a definitive cause-and-effect relationship between global warming and other observed changes to natural systems, there is a high level of confidence in the scientific community that these changes are a direct result of increased global temperatures caused by the increased presence of GHGs in the atmosphere (IPCC 2021).

Energy use (and efficiency) is an important indicator of GHG emissions, as well as a key opportunity to reduce GHG emissions. Therefore, energy is analyzed in this section in conjunction with the GHG analyses. This section considers the primary energy use needs for the proposed Project; the benefit of existing regulations that require energy-efficient construction and operation; and the potential for the proposed Project to result in the wasteful, inefficient, and unnecessary consumption of energy. The discussion of electrical and natural gas service providers and infrastructure is provided in Section 4.13, “Utilities and Service Systems.”

PRINCIPAL GREENHOUSE GASES AND SOURCES

GHGs are present in the atmosphere naturally, are released by natural and anthropogenic (human-caused) sources, and are formed from secondary reactions taking place in the atmosphere. Natural sources of GHGs include the

respiration of humans, animals, and plants; decomposition of organic matter; volcanic activity; and evaporation from the oceans. Anthropogenic sources include the combustion of fossil fuels by stationary and mobile sources, waste treatment, and agricultural processes. The following are the principal GHG pollutants that contribute to climate change and their primary emission sources:

- ▶ Carbon Dioxide (CO₂): Natural sources of CO₂ include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; and evaporation from oceans. Anthropogenic (human) sources include burning of coal, oil, natural gas, and wood.
- ▶ Methane (CH₄): CH₄ is emitted during the production and transport of coal, natural gas, and oil. CH₄ emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.
- ▶ Nitrous Oxide (N₂O): N₂O is produced by both natural and human-related sources. Primary human-related sources of N₂O are agricultural soil management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. N₂O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests.
- ▶ Fluorinated gases: These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes called High Global Warming Potential (High GWP) gases. These High GWP gases include:
 - Chlorofluorocarbons (CFCs): These GHGs are used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants.
 - Perfluorinated Chemicals (PFCs): PFCs are emitted as by-products of industrial processes and are also used in manufacturing.
 - Sulfur hexafluoride (SF₆): This is a strong GHG used primarily as an insulator in electrical transmission and distribution systems.
 - Hydrochlorofluorocarbons (HCFCs): These have been introduced as temporary replacements for CFCs and are also GHGs.
 - Hydrofluorocarbons (HFCs): These were introduced as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are GHGs emitted as by-products of industrial processes and are also used in manufacturing.

GHGs are not monitored at local air pollution monitoring stations and do not represent a direct impact to human health. Rather, GHGs generated locally contribute to global concentrations of GHGs, which result in changes to the climate and environment.

GLOBAL WARMING POTENTIAL

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time the gas remains in the atmosphere (its “atmospheric lifetime”).

The GWP of each gas is measured relative to CO₂. Therefore, CO₂ has a GWP of one. GHGs with lower emissions rates than CO₂ may still contribute to climate change because they are more effective at absorbing outgoing infrared radiation than CO₂ (i.e., high GWP). For example, SF₆, while comprising a relatively small fraction of the total GHGs emitted annually worldwide, has a GWP of 22,800, meaning that one ton of SF₆ has the same contribution to the greenhouse effect as approximately 22,800 tons of CO₂. The concept of CO₂ equivalence (CO₂e) is used to account for the different GWP potentials of GHGs. GHG emissions are typically measured in terms of metric tons (MT) of CO₂e, and are often expressed in MT CO₂e.

Climate change is a global issue because GHGs can have global effects. GHGs have long atmospheric lifetimes (one year to several thousand years), or long enough to be dispersed around the globe.

POTENTIAL EFFECTS OF 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 IPCC's 2021 Synthesis 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. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, and rising sea levels (IPCC 2021).

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. Climate change is expected to make parts of California hotter, drier, and increasingly prone to extremes like megadroughts, flooding, and large wildfires. These changing conditions are likely to affect water and energy availability, agricultural systems, plants and wildlife, public health, housing, and quality of life.

- ▶ **Agriculture.** Some of the specific challenges faced by the agricultural sector and farmers include more drastic and unpredictable precipitation and weather patterns; extreme weather events; significant shifts in water availability and water quality; changes in pollinator lifecycles; temperature fluctuations; increased risks from invasive species and weeds, agricultural pests, and plant diseases; and disruptions to the transportation and energy infrastructure supporting agricultural production.
- ▶ **Biodiversity and Habitat.** Specific climate change challenges to biodiversity and habitat include species migration, range shift, and novel combinations of species; pathogens, parasites, and disease; invasive species; extinction risks; changes in the timing of seasonal life-cycle events; food web disruptions; and threshold effects (i.e., a change in the ecosystem that results in a “tipping point” beyond which irreversible damage or loss occurs).
- ▶ **Energy.** Specific climate change challenges for the energy sector include temperature, fluctuating precipitation patterns, increasing extreme weather events, and sea level rise. Increasing temperatures and reduced snowpack negatively affect the availability of a steady flow of snowmelt to hydroelectric reservoirs. Higher temperatures also reduce the capacity of thermal power plants since power plant cooling is less efficient at higher ambient temperatures.
- ▶ **Forestry.** The most significant climate change–related risk to forests is accelerated risk of wildfire and more frequent and severe droughts. Droughts have resulted in more large-scale mortalities and, combined with increasing temperatures, have led to an overall increase in wildfire risks. Increased wildfire intensity

subsequently increases public safety risks, property damage, fire suppression and emergency response costs, watershed and water quality impacts, and vegetation conversions. These factors contribute to decreased forest growth, geographic shifts in tree distribution, loss of fish and wildlife habitat, and decreased carbon absorption.

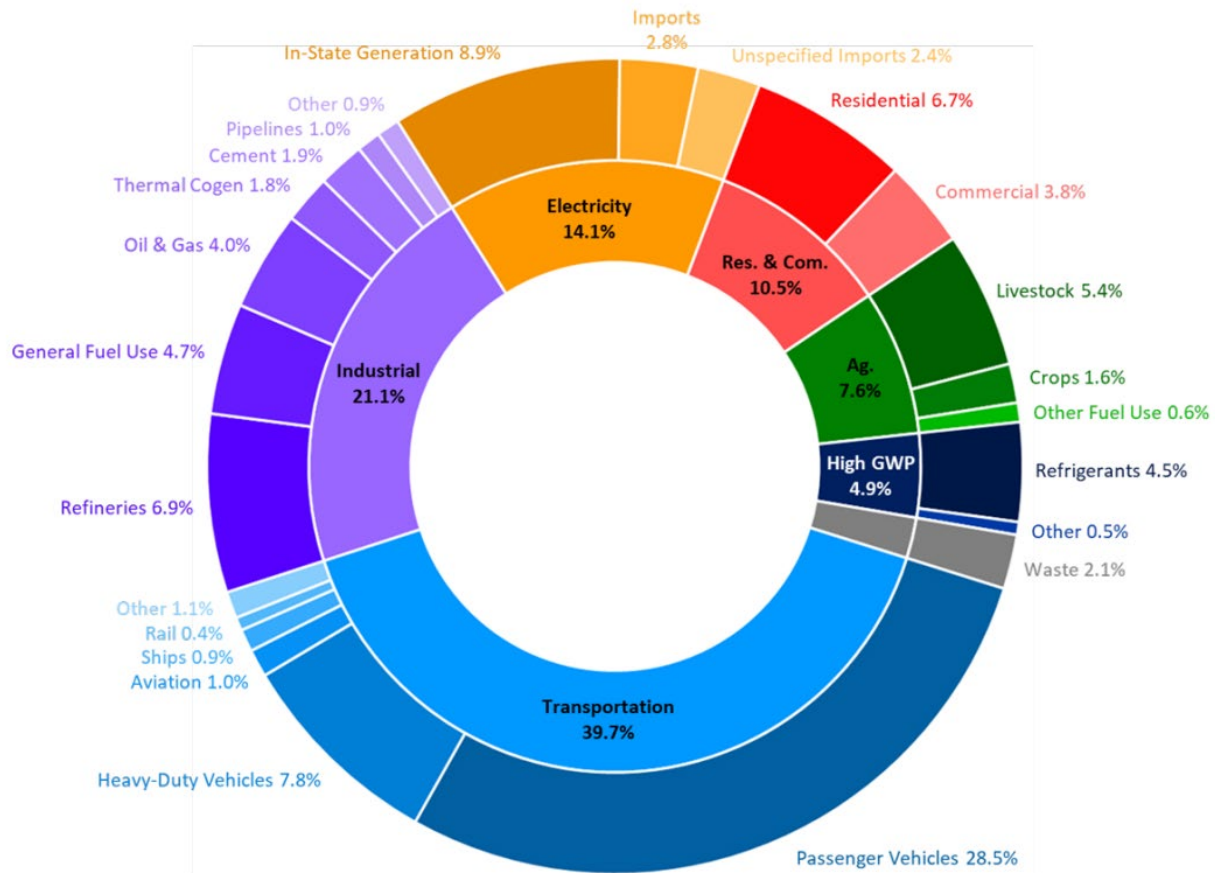
- ▶ **Ocean and Coastal Ecosystems and Resources.** Sea level rise, changing ocean conditions, and other climate change stressors are likely to exacerbate longstanding challenges related to ocean and coastal ecosystems in addition to threatening people and infrastructure located along the California coastline and in coastal communities.
- ▶ **Public Health.** Climate change can affect public health through various environmental changes. Changes in precipitation patterns affect public health primarily through potential for altered water supplies and extreme events such as heat, floods, droughts, and wildfires. Increased frequency, intensity, and duration of extreme heat and heat waves is likely to increase the risk of mortality due to heat-related illness, as well as exacerbate existing chronic health conditions. Other extreme weather events are likely to negatively affect air quality and increase or intensify respiratory illness such as asthma and allergies.
- ▶ **Transportation.** The transportation industry is vulnerable to climate change risks, including sea level rise and erosion, which threaten many coastal California roadways, airports, seaports, transit systems, bridge supports, and energy and fueling infrastructure. Increasing temperatures and extended periods of extreme heat threaten the integrity of the roadways and rail lines. Other forms of extreme weather events, such as extreme storm events, can negatively affect infrastructure, which can impair movement of people and goods, or potentially block evacuation routes and emergency access roads. Increased wildfires, flooding, erosion risks, landslides, mudslides, and rockslides can all profoundly affect the transportation system and pose a serious risk to public safety.
- ▶ **Water.** Climate change could seriously affect the timing, form, amount of precipitation, runoff patterns, and frequency and severity of precipitation events. Higher temperatures reduce the amount of snowpack and lead to earlier snowmelt, which can affect water supply availability, natural ecosystems, and winter recreation. Water supply availability during the intense dry summer months is heavily dependent on the snowpack accumulated during the wintertime. Increased risk of flooding has a variety of public health concerns including water quality, public safety, property damage, displacement, and post-disaster mental health problems. Prolonged and intensified droughts can also negatively affect groundwater reserves and result in increased overdraft and subsidence.

GREENHOUSE GAS EMISSIONS INVENTORIES AND TRENDS

State

The California Air Resources Board (ARB) prepares an annual inventory of statewide GHG emissions. GHGs are typically analyzed by sector, a term that refers to the type of activity. As shown in Exhibit 4.6-1, emissions from GHG emitting activities statewide were 418.2 million MT CO₂e in 2019. Although the State has updated this emissions inventory for 2020 and identified a reduction in statewide emissions of 35.3 million MT CO₂ from 2019 to 2020, the 2019 to 2020 decrease in emissions is noted by ARB as likely due in large part to the impacts of the COVID-19 pandemic and is likely an anomaly (ARB 2022a); therefore, emissions contained herein are reported for 2019. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG

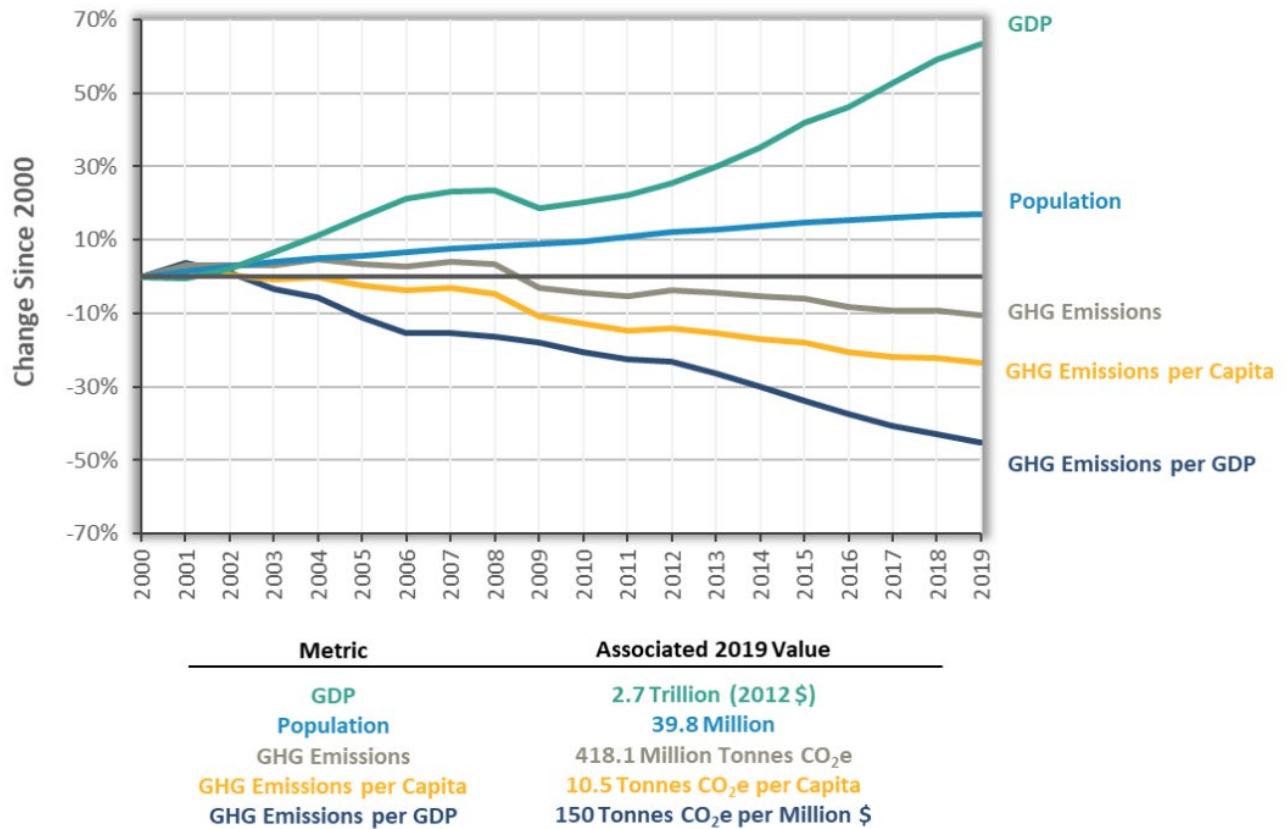
emissions in 2019, accounting for 40 percent of total GHG emissions. Transportation was followed by industry, which accounted for 21 percent, and then the electric power sector (including in-state and out-of-state sources), which accounted for 14 percent of total GHG emissions (CARB 2021a).



Source: CARB 2021a

Exhibit 4.6-1. 2019 California Greenhouse Gas Emissions Inventory by Sector

California has implemented several programs and regulatory measures to reduce GHG emissions. Exhibit 4.6-2 demonstrates California’s progress in reducing statewide GHG emissions. Since 2007, California’s GHG emissions have been declining, even as population and gross domestic product have increased. Per-capita GHG emissions in 2019 were 25 percent lower than the peak per-capita GHG emissions recorded in 2001. Similarly, GHG emissions per million dollars of gross domestic product have decreased by 47 percent since the peak in 2001.



Source: CARB 2021b

Exhibit 4.6-2. Trends in California Greenhouse Gas Emissions (Years 2000 to 2019)

San Francisco Bay Area

The Bay Area Air Quality Management District (BAAQMD) established a climate protection program in 2005 to acknowledge the link between climate change and air quality. The BAAQMD regularly prepares inventories of criteria and toxic air pollutants to support planning, regulatory and other programs. The most recent emissions inventory estimates GHG emissions produced by the San Francisco Bay Area (Bay Area) in 2011 (BAAQMD 2015). The inventory, which was published January 2015, updates the BAAQMD's previous GHG emission inventory for base year 2007. In 2011, approximately 87 MMT CO₂e of GHGs were emitted in the Bay Area. Fossil fuel consumption in the transportation sector was the single largest source of the Bay Area's GHG emissions in 2011. The transportation sector (including on-road motor vehicles, locomotives, ships and boats, and aircraft) contributed approximately 40 percent of GHG emissions and the industrial and commercial sectors (excluding electricity and agriculture) contributed 36 percent of GHG emissions in the Bay Area. Energy production activities such as electricity generation and co-generation were the third largest contributor with approximately 14 percent of the total GHG emissions. Off-road equipment such as construction, industrial, commercial, and lawn and garden equipment contributed 1.5 percent of GHG emissions.

Solano County

The County of Solano adopted a Climate Action Plan (CAP) in June 2011 to address climate change and reduce the community's GHG emissions at the local level. Based on the CAP, approximately 960,700 MT CO₂e were

generated within the unincorporated County in 2005, with transportation contributing approximately 51 percent of these communitywide annual emissions, electricity and natural gas contributing 22 percent, agriculture, contributing approximately 21 percent, the water sector contributing approximately 4 percent and the waste sector accounting for approximately 2 percent of the inventory (Solano County 2011).

ENERGY SOURCES AND DEMAND

Energy resources in the state of California include natural gas, electricity, water, wind, oil, coal, solar, geothermal, and nuclear resources. Energy production and energy use both result in the depletion of nonrenewable resources, such as oil, natural gas, and coal, and result in the emissions of pollutants. Primary energy resources associated directly with the proposed Project include gasoline and diesel fuel, electricity, and natural gas.

Pacific Gas and Electric (PG&E) delivers electricity and provides natural gas service to unincorporated Solano County and the city of Suisun City and would provide such service to the Project site. PG&E is regulated by the California Public Utilities Commission and purchases both gas and electrical power from a variety of sources, including other utility companies. PG&E offers customers the option to purchase up to 100 percent of their electricity from a community renewable program generating renewable power within California.

Gasoline and diesel fuel are the primary fuels for transportation in California. However, the types of transportation power sources have diversified in California and elsewhere, including the increase in electric and hybrid vehicles. Various statewide regulations and plans (e.g. Low Carbon Fuel Standard, AB 32 Scoping Plan), in addition to federal funding programs, encourage the use of a variety of alternatives are used to reduce demand for petroleum-based fuel. Depending on the vehicle capability, conventional gasoline and diesel are increasingly being replaced by biodiesel, electricity, ethanol, hydrogen, natural gas, and other synthetic fuels. California has a growing number of alternative fuel vehicles through the joint efforts of the California Energy Commission (CEC), ARB, local air districts, federal government, transit agencies, utilities, and other public and private entities.

4.6.2 REGULATORY FRAMEWORK

Federal, state, regional, and local GHG-related plans, policies, and regulations are helpful for understanding the overall context for GHG emissions impacts and strategies to reduce GHG emissions.

Federal Plans, Policies, Regulations and Laws

The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for implementing the federal Clean Air Act (CAA). On April 2, 2007, the U.S. Supreme Court held that the EPA must consider regulation of motor vehicle GHG emissions. In *Massachusetts v. Environmental Protection Agency et al.*, 12 states and cities (including California) along with several environmental organizations sued to require EPA to regulate GHGs as pollutants under the CAA (127 S. Ct. 1438 [2007]). The Inflation Reduction Act, signed on August 16, 2022, affirms EPA's authority to regulate greenhouse gas emissions under the CAA.

State Plans, Policies, Regulations, and Laws

The legal framework for GHG emissions analysis has come about through Executive Orders, legislation, and regulations. The major components of California's climate change initiatives are outlined below.

Greenhouse Gas Reduction Targets

Executive Order S-3-05

Executive Order S-3-05, issued in recognition of California’s vulnerability to the effects of climate change, set forth the following target dates by which statewide GHG emissions would be progressively reduced: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels.

Assembly Bill 32 and the State Climate Change Scoping Plan

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500, et seq.). AB 32 further details and puts into law the mid-term GHG reduction target established in Executive Order S-3-05: reduce GHG emissions below 1990 levels by 2020. AB 32 also identifies CARB as the State agency responsible for the design and implementation of emissions limits, regulations, and other measures to meet the target.

In December 2008, CARB adopted the Climate Change Scoping Plan (Scoping Plan), which contains the main strategies California will implement to achieve the required GHG reductions required by AB 32 (CARB 2008). The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of California’s GHG inventory. CARB acknowledges that land use planning decisions will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors. The Scoping Plan details the regulations, alternative compliance mechanisms, voluntary actions, and incentives proposed to meet the target emission reduction levels.

The Scoping Plan differentiates between “capped” and “uncapped” strategies. Capped strategies are subject to the proposed Cap-and-Trade Program, discussed further below. The Scoping Plan states that the inclusion of these emissions within the Cap-and-Trade Program will help ensure that the emission targets in AB 32 are met despite some degree of uncertainty in the emission reduction estimates for any individual measure. Uncapped strategies that will not be subject to the Cap-and-Trade Program are provided as a margin of safety by accounting for additional GHG emission reductions (CARB 2008).

CARB is required to update the Scoping Plan at least once every five years to evaluate progress and develop future inventories that may guide this process. CARB approved the first update to the Climate Change Scoping Plan: *Building on the Framework* in June 2014 (CARB 2014). The Scoping Plan Update includes a status of the 2008 Scoping Plan measures and other federal, State, and local efforts to reduce GHG emissions in California, and potential actions to further reduce GHG emissions by 2020. The Scoping Plan Update determined that the State was on schedule to achieve the 2020 target (i.e., 1990 levels by 2020) and that an accelerated reduction in GHG emissions is required to achieve the S-3-05 2050 reduction target of 80 percent below 1990 levels by 2050.

CARB released the 2030 Target Scoping Plan Update Concept Paper to initiate a discussion regarding how to most effectively achieve a 40 percent reduction in GHG emissions by 2030 as compared to 1990 statewide GHG emissions (consistent with SB 32 and Executive Order B-30-15, outlined below) (CARB 2016). This Concept Paper was followed by the release of the 2017 Scoping Plan Update: *California’s 2017 Climate Change Scoping Plan*, which establishes a proposed framework of action for California to reduce statewide emissions by 40 percent by 2030 compared to 1990 levels (CARB 2017). CARB has now released the final 2022 Scoping Plan

Update, which evaluates progress toward the statutorily required 2030 target, as well as examining scenarios that could achieve carbon neutrality by 2045 or sooner (CARB 2022b). The statewide measures adopted under the direction of AB 32, and as outlined in the Scoping Plan and updates to the Scoping Plan, would reduce GHG emissions associated with existing development, as well as new development.

Executive Order B-30-15

Signed in 2015, EO B-30-15 established a statewide GHG reduction goal of 40 percent below 1990 levels by 2030. The emission reduction target acts as an interim goal between the AB 32 goal (i.e., achieve 1990 emission levels by 2020) and EO S-3-05 goal of reducing statewide emissions 80 percent below 1990 levels by 2050. In addition, the executive order aligns California's 2030 GHG reduction goal with the European Union's reduction target (i.e., 40 percent below 1990 levels by 2030) that was adopted in October 2014. EO B-30-15 also requires all state agencies with jurisdiction over sources of GHG emissions to implement measures within their statutory authority for achieving reductions in GHG emissions and meeting the 2030 and 2050 GHG emission reduction targets.

Senate Bill 32

SB 32 was adopted in 2016, amending the California Global Warming Solutions Act of 2006.¹ SB 32 directed ARB to adopt, to the extent technologically feasible and cost effective, the rules and regulations necessary to achieve a reduction in statewide GHG emissions (i.e., to 40 percent below 1990 levels by 2030). The passage of SB 32 codified the 2030 interim GHG emissions reduction target established by Executive Order B-30-15.

SB 32 was paired with AB 197 (2016), which amended the Health and Safety Code.² AB 197 provides additional guidance on how to achieve the reduction targets established in EO B-30-15 and SB 32. SB 32 and AB 197 became effective January 1, 2017.

Assembly Bill 1279

For the post-2030 period, EO B-55-18 established a statewide goal of achieving carbon neutrality as soon as possible, but no later than 2045, and achieving and maintaining net negative emissions thereafter. Signed September 16, 2022, AB 1279, the California Climate Crisis Act, codified EO B-55-18. This bill declares the policy of the state both to achieve net zero greenhouse gas emissions as soon as possible, but no later than 2045, and achieve and maintain net negative greenhouse gas emissions thereafter. It as requires that by 2045 statewide anthropogenic greenhouse gas emissions are reduced to at least 85 percent below the 1990 levels.

Transportation Sector Regulations to Reduce Greenhouse Gas Emissions

Senate Bill 375

SB 375, signed in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires the 18 Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) to address ARB adopted regional GHG targets for passenger

¹ California Health and Safety Code Division 25.5, Section 38566.

² California Government Code, Division 2 of Title 2, Article 7.6 of Chapter 1.5, California Health and Safety Code Sections 39510, 39607, 38506, 38531, and 38562.5.

vehicles and light trucks. If the combination of measures in the SCS would not meet the regional targets, the MPO must prepare a separate “alternative planning strategy” to meet the targets.

ARB Advanced Clean Cars Program/Zero Emission Vehicle Program

AB 1493 (Chapter 200, Statutes of 2002), also known as the Pavley regulations, required ARB to adopt regulations by January 1, 2005, that would result in the achievement of the “maximum feasible” reduction in GHG emissions from vehicles used in the State primarily for non-commercial, personal transportation.

In January 2012, ARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards called Advanced Clean Cars (13 California Code of Regulations [CCR] 1962.1 and 1962.2). The Advanced Clean Cars requirements include GHG standards for model year 2017 to 2025 vehicles.

The Advanced Clean Cars Program also includes the Low Emission Vehicle (LEV) III amendments to the LEV regulations (13 CCR 1900 *et seq.*); Zero Emission Vehicle Program and the Clean Fuels Outlet Regulation. The Zero Emission Vehicle Program is designed to achieve California’s long-term emission reduction goals by requiring manufacturers to offer for sale specific numbers of the very cleanest cars available. These zero-emission vehicles, which include battery electric, fuel cell, and plug-in hybrid electric vehicles, have now entered the marketplace. The Clean Fuels Outlet regulation ensures that fuels, such as electricity and hydrogen, are available to meet the needs of the new advanced technology vehicles as they come to market. ARB projects that the LEV III standards will reduce motor vehicle GHG emissions by 34 percent in 2025 (ARB 2022b). In June 2022, in support of EO N-79-20, ARB proposed the Advanced Clean Cars II Regulations requiring manufacturers of light-duty passenger cars, trucks, and sport utility vehicles (SUVs) to transition to electric zero-emission vehicles beginning with model year 2026 and phasing in of increasingly stringent requirements through 2035. By 2035, under the proposed Advanced Clean Cars II Regulations, all new passenger vehicles sold within the state would be zero emission.

Advanced Clean Trucks

The advanced clean truck regulation, approved in March 2021, is part of the ARB approach to achieve a large-scale transition to zero-emission medium- and heavy-duty vehicles for Class 2b to Class 8 trucks.³ The basis of the advanced clean truck regulation is to help ensure that zero-emission vehicles, specifically medium- and heavy-duty trucks, are brought to market. For manufacturers of these vehicles, the regulation requires zero-emission truck/chassis sales to be an increasing percentage of the total annual California sales of Class 2b through Class 8 sales from 2024 to 2035; by 2035, zero-emission truck/chassis sales would need to be 55 percent of Class 2b – 3 truck sales, 75 percent of Class 4 – 8 straight truck sales, and 40 percent of truck tractor sales. The regulation also includes reporting requirements for large employers, including retailers, manufacturers, and brokers, regarding shipments and shuttle services; as well as reporting requirements about fleet operations for fleet owners with 50 or more trucks.

³ Class 2b vehicles have a gross vehicle weight rating ranging from 8,501 to 10,000 pounds. Class 3 through 8 vehicles have a gross vehicle weight rating of 10,001 pounds or more. Code of Federal Regulations, Part 523 – Vehicle Classification, <https://www.ecfr.gov/current/title-49/subtitle-B/chapter-V/part-523>, accessed March 10, 2023.

Advanced Clean Fleet

The advanced clean fleet regulation is still being developed and is subject to change. Building on the advanced clean truck regulation, the basis of the proposed advanced clean fleet regulation is to deploy medium- and heavy-duty zero-emission vehicles (i.e., trucks, vans, and buses) everywhere feasible by requiring fleets, as appropriate, to transition to zero-emission vehicles. The proposed regulation targets fleets, businesses, and public entities that own or direct the operation of medium- and heavy-duty vehicles in California to increase the purchase and operation of zero-emission vehicles and achieve a transition to zero-emission vehicles fleets by 2040 everywhere feasible. The proposed regulation would affect fleets performing drayage operations; those owned by state, local, and federal government agencies; and high-priority fleets. The regulation would apply to medium- and heavy-duty vehicles, off-road yard trucks, and light-duty mail and package delivery vehicles.

Transportation Refrigeration Unit Airborne Toxic Control Measure

ARB adopted the transportation refrigeration unit (TRU) airborne toxic control measure in 2004 (and amended it in 2010 and 2011) to reduce DPM emissions and related health risk from diesel-powered TRUs. In February 2022, ARB approved amendments to the TRU airborne toxic control measure. The 2022 amendments include a lower PM emissions standard of no greater than 0.02 gram per brake hp-hour, which aligns with the U.S. EPA standard for Tier 4 final off-road PM emissions for 25 to 50 hp engines. This standard applies to all model year 2023 and newer trailer TRUs, domestic shipping container TRUs, railcar TRUs, and TRU generator set engines. Beginning in 2023, the 2022 airborne toxic control measure requires TRU owners to turn over at least 15 percent of their truck TRU fleet operating in California to zero-emission technology each year for seven years. Finally, the 2022 airborne toxic control measure includes several additional reporting requirements to demonstrate compliance. The 2022 airborne toxic control measure anticipates all truck TRUs operating in California to be zero-emission by the end of the year 2029.

California Executive Order N-79-20

On September 23, 2020, Governor Gavin Newsom issued Executive Order N-79-20 establishing a goal that 100 percent of new passenger cars and trucks sold in California shall be zero-emission by 2035. The Executive Order also sets a goal that, where feasible, all operations include zero-emission medium- and heavy-duty trucks by 2045, and drayage trucks by 2035. Off-road vehicles have a goal to transition to 100 percent ZEVs by 2035, where feasible. While in-state sales of EVs will increase through 2045, the State does not have legislation which will restrict or preclude the use of fossil-fueled vehicles by or after 2045.

Energy Sector Regulations to Reduce Greenhouse Gas Emissions

Senate Bill 1078 (2002), Senate Bill 100 (2021) – California Renewable Portfolio Standard

Established in 2002 by SB 1078, California's Renewables Portfolio Standard (RPS) requires electricity providers (i.e., utilities, cooperatives, and community choice aggregators) to provide a specified minimum portion of their electricity supply from eligible renewable resources by milestone target years. Since 2002, state legislative actions have modified and accelerated the RPS several times, resulting in one of the most ambitious renewable energy standards in the country. As of December 2021, per SB 100, the RPS requires retail sellers of electricity to serve 60 percent of their electric load with renewable energy by 2030 with new interim targets of 44 percent by 2024 and 52 percent by 2027, as well as requiring that all of the state's electricity come from carbon-free resources (not only RPS-eligible ones) by 2045.

California Code of Regulations Title 20: Appliance Efficiency Regulations

California Code of Regulations, Title 20, Division 2, Chapter 4, Article 4, Sections 1601-1608 (Appliance Efficiency Regulations): Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. There are 23 categories of appliances are included in the scope of these regulations. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the State and those designed and sold exclusively for use in recreational vehicles or other mobile equipment.

California Code of Regulations Title 24, Part 6: Energy Efficiency Standards

California Code of Regulations, Title 24, Part 6 (California's Energy Efficiency Standards for Residential and Nonresidential Buildings or Building Energy Efficiency Standards) was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The California Energy Commission updates the Building Energy Efficiency Standards every three years. In addition to strengthening standards, updates allow consideration and possible incorporation of new energy-efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2019 Building Energy Efficiency Standards went into effect on January 1, 2020, and the 2022 Building Energy Efficiency Standards were adopted August 11, 2021, and are applicable to buildings for which permit applications are applied for on or after January 1, 2023.

California Code of Regulations Title 24, Part 11: California Green Building Standards Code

California Code of Regulations, Title 24, Part 11, is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went into effect on January 1, 2011. The Code is updated on a regular basis. The 2019 California Green Building Standards Code (CALGreen) became effective January 1, 2020, and the 2022 California Green Building Standards Code, Title 24 became effective January 1, 2023. Local jurisdictions are permitted to adopt more stringent requirements, as State law provides methods for local enhancements.

Regional Plans, Policies, Regulations and Laws

Plan Bay Area 2050

As required by SB 375, the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) are jointly tasked with developing a Sustainable Communities Strategy (SCS) as part of development of the Regional Transportation Plan (RTP). The SCS integrates transportation, land use, and housing for the region to help the State meet GHG reduction mandates.

Plan Bay Area 2050 is a long-range regional plan for the nine-county San Francisco Bay Area, adopted by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) in October 2021. Plan Bay Area originally was developed out of the California Sustainable Communities and Climate Protection Act of 2008 (California Senate Bill 375), which requires each of the state's 18 metropolitan areas, including the Bay Area, to reduce GHG emissions from cars and light-duty trucks. Thirty-five strategies comprise the plan to improve housing, the economy, transportation, and the environment across the Bay Area's nine counties — Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and

Sonoma. These strategies are public policies or set of investments that can be implemented in the Bay Area at the city, county, regional, or state level over the next 30 years (ABAG 2021).

The proposed Project's Development Area is identified by the Plan Bay Area 2050 as a Priority Production Area (PPA) (ABAG 2021). PPAs are defined as locally identified places for job growth in middle-wage industries like manufacturing, logistics, or other trades (ABAG 2021). An area must be zoned for industrial use or have a predominantly industrial use, at least one-half mile from a major rail commute hub, and be located in a jurisdiction with a certified housing element to be defined as a PPA (ABAG 2022).

Plan Bay Area 2050 integrates the region's SCS, RTP, and Regional Housing Need Allocation (RHNA) into a single regional plan. Plan Bay Area 2050 contains several goals for the region to attain ranging in focus from housing, economic development, transportation, and environmental resilience.

County of Solano Climate Action Plan

The County of Solano CAP set a target GHG reduction of 20 percent below 2005 emissions inventory levels by 2020. It recommends 31 measures and 94 implementing actions that the community can take to reduce both emissions and community-wide contributions to global climate change. None of the measures and implementation actions are applicable to the proposed Project.

City of Suisun City General Plan

The Suisun City General Plan (City of Suisun City 2015) includes the following policies related to public services that apply to the proposed Project.

Transportation Element

- ▶ Policy T-3.2: The City will encourage new developments and public facility investments designed to minimize vehicle trips and vehicle miles traveled.
- ▶ Policy T-3.6: New developments that would accommodate 100 full- or part-time employees or more are required to incorporate feasible travel demand management strategies, such as contributions to transit/bike/pedestrian improvements; flextime and telecommuting; a carpool program; parking management, cash out, and pricing; or other measures, as appropriate, to reduce travel demand.
- ▶ Policy T-3.7: The City will support regional goals to reduce per-capita GHG emissions reductions from automobiles and light-duty trucks in a way that also promotes 2035 General Plan objectives.
- ▶ Policy T-6.13: New developments shall provide pathways that link to sidewalks, trails, streets, and adjacent transit stops.

Open Space and Conservation Element

- ▶ Policy OSC-8.2: The City will require that new developments are designed for maximum energy efficiency, taking into consideration such factors as building-site orientation and construction, articulated windows, roof overhangs, appropriate building and insulation materials and techniques, and other architectural features that improve passive interior climate control.

- ▶ Policy OSC-8.3: The City will encourage landscaping methods, materials, and designs that promote energy conservation.
- ▶ Policy OSC-8.5: The City will require that new buildings meet state standards for energy efficiency and provide for renewable energy development and use, to the greatest extent feasible.
- ▶ Policy OSC-8.8: The City will encourage the installation and use of active solar systems to reduce electricity use from the grid.

4.6.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

METHODOLOGY

The proposed Project’s GHG emissions were estimated using similar methods as those described in Section 4.2, “Air Quality.”

For construction, this analysis uses CalEEMod to estimate GHG emissions for off-road construction equipment, material delivery trucks, haul trucks, and construction worker vehicles. The same Project-specific inputs applied to the estimating of criteria air pollutants, as described in Section 4.2, “Air Quality,” were used to estimate construction-related GHG emissions.

For operational activities, GHG emissions were estimated for worker commute trips, visiting truck trips, transportation refrigeration unit (TRU) use in transit, on-site travel of workers and trucks, on-site idling of TRUs and trucks, on-site yard equipment (e.g., forklifts), stationary (i.e., backup generator) sources, and natural gas use, using the same data and assumptions as those used to estimate criteria air pollutants. In addition, CalEEMod also estimates indirect GHG emissions associated with electricity and water consumption, refrigerants, wastewater treatment, and solid waste transport; while there are no criteria air pollutant emissions associated with these sources, these GHG emissions were estimated using CalEEMod for building operations and included for the purposes of estimating total Project-related GHG emissions provided in this section. Please see Appendix B of this EIR for model details, assumptions, inputs, and outputs.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, the proposed Project would have a significant impact related to GHG emissions and energy resources if it would:

- ▶ generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment;
- ▶ conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of GHGs;
- ▶ result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- ▶ conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

Establishment of GHG Thresholds for this Project

CEQA Guidelines Section 15064.4(b) states that, when assessing the significance of impacts from GHG emissions, a lead agency should consider (1) the extent to which a project may increase or reduce GHG emissions compared with existing conditions, (2) whether a project’s GHG emissions would exceed a threshold of significance that the lead agency has determined to be applicable to the project, and (3) the extent to which a project would comply with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

As described above in the Regulatory Framework, the basis for evaluating the significance of GHG emissions is established by the State’s legislative mandates for GHG emissions reduction, which are themselves based on global assessments of GHG concentrations and climate change effects. AB 32 (2006) required reduction of statewide GHG emissions to 1990 levels by 2020, which was achieved. SB 32 (2016) established a reduction mandate of 40 percent below 1990 statewide emissions levels by 2030. AB 1279 (2022) established a statewide policy of achieving carbon neutrality⁴ no later than 2045 and achieving and maintaining net negative emissions thereafter, and requires that by 2045 Statewide anthropogenic greenhouse gas emissions are reduced to at least 85 percent below the 1990 levels.

As explained in the introduction to this impact section, there is substantial scientific evidence amongst international experts regarding the implications of global warming and the critical need to limit warming to 1.5°C, with the mid-century mark as a likely point at which such warming could occur without near-term action and long-term planning. The State’s GHG reduction goals are established based on this science and reflect the scientific community’s consensus of what is needed to limit global warming (OPR 2018). Therefore, these near-term and long-term legislative targets create a framework that can be used to inform the level of emissions reductions necessary and whether GHG emissions associated with a project would represent a cumulatively considerable contribution to the significant cumulative impact of climate change. As the Supreme Court held, “consistency with meeting [those] statewide goals [is] a permissible significance criterion for project emissions” (*Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th 220).

Compared to global emissions of GHGs, the proposed Project will not, by itself, contribute significantly to climate change; however, cumulative emissions from many projects and plans all contribute to global GHG concentrations and the climate system. As stated by the Supreme Court, “[t]o the extent a project incorporates efficiency and conservation measures sufficient to contribute its portion of the overall GHG reductions necessary [to achieve the State’s climate goals], one can reasonably argue that the project’s impact is not cumulatively considerable, because it is helping to solve the cumulative problem...” (*Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th 220 [internal quotation marks omitted]).

Lead agencies have flexibility to develop their own significance thresholds or to determine significance thresholds within environmental documents on a case-by-case basis. Neither the City nor the BAAQMD has adopted thresholds of significance for construction-related GHG emissions. The most recent BAAQMD CEQA Thresholds Justification Report (April 2022) states that GHG “emissions from construction represent a very small portion of a project’s lifetime GHG emissions” and that the BAAQMD’s GHG “thresholds for land use project

⁴ “Carbon neutrality” is defined in Executive Order B-55-18 as the point at which the removal of carbon pollution from the atmosphere meets or exceeds carbon emissions. Carbon neutrality is achieved when carbon dioxide and other GHGs generated by sources such as transportation, power plants, and industrial processes are less than or equal to the amount of carbon dioxide that is stored, both in natural sinks and mechanical sequestration.

are designed to address operational GHG emissions which represent the vast majority of project GHG emissions.” The BAAQMD, in their 2022 CEQA Air Quality Guidelines (adopted April 2022), suggests that lead agencies should quantify and disclose GHG emissions from project construction and incorporate best management practices (BMPs) to reduce GHG emissions during construction, as feasible and applicable. BAAQMD provides a list of BMPs for construction-related GHG emissions in its CEQA Air Quality Guidelines (Table 6-1 of the Guidelines).

In order to provide a more comprehensive assessment of cumulative GHG emissions-related effects, the proposed Project’s construction related emissions were quantified for total construction emissions and amortized over the estimated lifetime of the Project and added to the operational emissions.

For operational GHG emissions, BAAQMD adopted recommended thresholds of significance on April 20, 2022 for evaluating impacts under CEQA related to the generation of GHG emissions and climate change. BAAQMD’s approach was to identify what project design features and transportation performance standards “will be required of new land use development projects to achieve California’s long-term climate goal of carbon neutrality goal by 2045” (BAAQMD 2022, page 2). BAAQMD’s recommendations for thresholds are summarized in the BAAQMD’s Justification Report: *CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans*. Specifically, the recommended design elements are intended to allow a new land use development project to demonstrate its ‘fair share’ of what would be required to achieve the State’s long-term 2045 climate goal.

Based on the BAAQMD Justification Report: *CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans* (2022) a project that demonstrates consistency with either criterion A or B provided below would be considered to result in result a less-than-significant (less than cumulatively considerable) impact related to GHG emissions. BAAQMD criteria are as follows:

- A. Projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b), or
- B. Projects must include, at a minimum, the following project design elements.
 - a. Buildings:
 - i. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
 - ii. The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.
 - b. Transportation:
 - i. Achieve compliance with EV requirements in the most recently adopted version of CALGreen Tier 2.
 - ii. Achieve a reduction in project-generated VMT below the regional average consistent with the current version of the California Climate Change Scoping Plan

(currently 15 percent) or meet a locally adopted SB 743 VMT target, reflecting the recommendations provided in the Governor’s Office of Planning and Research’s Technical Advisory on Evaluating Transportation Impacts in CEQA:

1. Residential projects: 15 percent below the existing VMT per capita.
2. Office projects: 15 percent below the existing VMT per employee.
3. Retail projects: no net increase in existing VMT.

The BAAQMD-identified design elements outlined in criteria A and B above reflect BAAQMDs analysis of how residential, office, and retail projects need to be designed, located, and built to contribute a fair share of the reductions required for the state as a whole to achieve carbon neutrality by 2045. The identified design elements were established based on the concept that a majority of GHG emissions from the land use sector result from building energy use and transportation. Regarding natural gas usage, BAAQMD’s analysis acknowledges that retrofitting an existing building to replace natural gas infrastructure with electrical service is difficult and expensive, and often not feasible or desirable for building owners and operators after the time of construction. However, to achieve the long-term goal of carbon neutrality and consistency with the State 2022 Scoping Plan, BAAQMD concluded that natural gas usage must be eliminated from buildings. BAAQMD’s Justification Report notes that the need to eliminate natural gas in new projects in order to achieve carbon neutrality in buildings by 2045 is demonstrated by analyses conducted by the California Energy Commission (CEC) in its California Building Decarbonization Assessment (CEC 2021), in which the CEC found that actions that hinder the most aggressive building electrification scenario would also obstruct the State achieving its 2045 GHG target. With the elimination of natural gas, this would also increase reliance upon electricity. SB 100 requires that all electricity provided to retail users in California come from carbon-free sources by 2045, which is the responsibility of the utility and not the end user. The shift to intensified electrification of both land use and transportation will also put an increased demand on electricity resources. Without increasing energy efficiency, the increased shift to electricity as the primary energy source could require the development of additional carbon-free energy sources at higher costs and delays in meeting the State’s mandate of 100 percent carbon-free electricity by 2045, also necessary in achieving the State’s 2045 carbon neutrality goal. Finally, with regard to transportation, decarbonization of transportation requires shifting to electric vehicles, as well as reducing VMT. BAAQMD identified Tier 2 CalGreen standards for EV infrastructure as the pathway toward providing EV infrastructure that goes beyond short-term charging needs and provides for long-term 2045 vehicle electrification. BAAQMD’s recommended VMT reductions are based on the OPR recommendations in its *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR 2018). This OPR guidance, and the BAAQMD threshold criteria provide guidance for VMT and associated GHG emissions attributable to residential, office, and retail projects.

As described above, lead agencies maintain flexibility to develop their own significance thresholds or to determine significance thresholds on a case-by-case basis in the context of individual environmental documents. As noted in the BAAQMD Justification Report, the BAAQMD developed these thresholds of significance based on “typical residential and commercial land use projects and typical long-term communitywide planning documents such as general plans and similar long-range development plans” and “these thresholds are or may not be appropriate for other types of projects that do not fit into the mold of a typical residential or commercial project or general plan update” (BAAQMD 2022, pages 3 and 4). The BAAQMD analysis and recommended design elements for a project to demonstrate less than significant GHG emissions does not account for unique

components associated with other land use types, such as warehousing and logistics or the proposed Project, nor, as noted above, does the BAAQMD approach address the significance of GHG emissions associated with heavy-duty trucks.

In demonstrating consistency with statewide GHG reduction mandates, it is important to consider the efficiency of a project's GHG emissions profile – to evaluate whether a subject project “incorporates efficiency and conservation measures sufficient to contribute its portion of the overall greenhouse gas reductions necessary” for the State to achieve its own mandates (*Center for Biological Diversity*). If a project or plan demonstrates that the *rate* of GHG emissions is efficient enough to provide its share of State emissions reduction targets, the impact is not cumulatively considerable (*Center for Biological Diversity v. California Department of Fish and Wildlife*; Crockett 2011). Therefore, for evaluation of the proposed Project's generation of GHG emissions, and for an evaluation under the State's shorter-term goal of SB 32 (achieve 40 percent below 1990 levels by 2030) and long-term goal established under AB 1279 (no later than 2045, achieve carbon neutrality⁵ and reduce anthropogenic emissions to 85 percent below 1990 levels), the City has chosen to use a GHG efficiency metric and analysis methodology that are specifically tailored for new development, to the proposed Project type, and to the proposed Project location to assess the GHG efficiency of the proposed Project, whether the proposed Project would be consistent with statewide legislative mandates, and whether the proposed Project would provide for its fair share of emissions reductions embodied within SB 32 and AB 1279 short- and long-term statewide reduction targets, respectively.

The intent of the 2022 Scoping Plan, and the State legislation on which it is built, is to decouple the State's population and economic growth from carbon emissions, thereby accommodating continued growth in California but in a way that achieves a lower *rate* of GHG emissions (ARB 2008, 2022a). With a reduced rate of emissions per resident and employee, California can accommodate expected population growth and achieve economic development objectives, while also abiding by legislative emissions targets. An efficiency target can be developed that mirrors statewide emissions reduction legislation and applicable EOs for the target year. To create an efficiency target, the statewide emissions target for a specified target year can be divided by the forecast population and/or employment statewide for the same year. This yields an emissions “budget” for each California resident/employee and allows a community to assess whether or not a subject project's emissions rate is consistent with the statewide emissions budget.

To develop an efficiency target, the statewide mass emissions targets for the analysis year (e.g., 2030) are divided by the forecast “service population” (i.e., population and/or employment) statewide for the same year. This yields an emissions “budget” for each resident and/or employee that would be accommodated by a proposed Project and provides a metric by which to assess whether a development project's emissions rate is consistent with the statewide emissions reduction legislation for a reduction of GHG emissions to 40 percent below 1990 levels by 2030 (per SB 32) and 85 percent below 1990 levels by 2045 (AB 1279). To make this relevant to the proposed Project, however, the statewide mass emissions target and service population were tailored to focus on the emissions sources and employment sectors that are specifically relevant for the proposed Project.

⁵ “Carbon neutrality” is defined in Executive Order B-55-18 as the point at which the removal of carbon pollution from the atmosphere meets or exceeds carbon emissions. Carbon neutrality is achieved when carbon dioxide and other GHGs generated by sources such as transportation, power plants, and industrial processes are less than or equal to the amount of carbon dioxide that is stored, both in natural sinks and mechanical sequestration.

In building the significance threshold, the non-land use-related emissions and jobs were removed from consideration. Since the efficiency significance threshold is a ratio, with emissions in the numerator and service population in the denominator, it was appropriate to remove inapplicable emissions sources from the numerator and inapplicable employment estimates associated with these emissions sources from the denominator to allow an appropriate comparison with project GHG efficiency. By removing these emissions and jobs from the calculation of statewide GHG efficiency, the efficiency threshold is tailored for the proposed Project, consistent with suggestions in the ruling in *Center for Biological Diversity. v. California Department of Fish and Wildlife (2015)*. For example, as explained in the note to Table 4.6-1, jobs that are not specific to Solano County and related emissions were removed from consideration (EDD 2022). In addition, as the proposed Project does not propose residential uses, the service population for the purposes of this Project-specific threshold is defined only as employees; therefore, emissions associated with residential uses were removed from the numerator and residents (i.e., population) were not included in the denominator, thereby further refining the GHG efficiency threshold to be specifically applicable to the Project type. Tailoring the efficiency significance threshold in this way ensures that the threshold is appropriate for use by the proposed Project and the Project Site.

Table 4.6-1 presents the land use-related statewide emissions and employment figures and calculates the proposed 2030 and 2045 GHG efficiency targets to quantitatively evaluate the proposed Project’s GHG emissions. For the purposes of analysis in this EIR, the 2030 GHG efficiency threshold was calculated to be 13.981 MT CO₂e per employee and the 2045 GHG efficiency threshold was calculated to be 3.32 MT CO₂e per employee; additional calculations and inputs beyond the methodology explained above and data provided in Table 4.6-1 is available in Appendix B to this EIR.

Table 4.6-1. Project-Specific Greenhouse Gas Efficiency Threshold

Metric	1990 State Inventory	2030 Project-specific GHG Efficiency Threshold	2045 Project-specific GHG Efficiency Threshold
Statewide Emissions (MMT CO ₂ e/yr) ¹	431	258.6	64.7
Adjusted Land Use-Related Emissions (MMT CO ₂ e/yr) ¹	286	173	43
Percent Mass Emissions Reduction	n/a	40 percent below 1990	85 percent below 1990
Adjusted Land Use-Related Employment ² (service population)	n/a	12,371,400	13,025,310
Per Employee Emissions Efficiency Threshold (MT CO ₂ e/SP)	n/a	13.98	3.32

Notes: ARB = California Air Resources Board, EO = Executive Order, GHG = greenhouse gas, MMT CO₂e = million metric tons of carbon dioxide equivalent; n/a = not applicable, Service Population (SP) = population + employment, yr = year

¹ California 1990 Greenhouse Gas Emissions Level and 2030 Limit by Sector, ARB: <http://www.arb.ca.gov/cc/inventory/1990level/1990level.htm>; targets for 2030 based upon 40 percent mass emissions reduction target established by SB 32; targets for 2045 based upon 85 percent mass emissions reduction goal established by AB 1279.

² Employment data from the Employment Development Department Labor Market Information Division. Sorted to remove jobs that are unrelated to the proposed Project.

See Appendix B for detailed calculations and inputs.

The ARB 2022 Scoping Plan Update assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045. Carbon neutrality is not a standard to be achieved on an individual project basis, but through the implementation of best available technology, increasingly stringent regulations to

reduce emissions from various sources, State, and regional plans to reduce VMT and increase carbon-free vehicle use, and carbon capture and sequestration actions focused on the natural and working lands sector, as identified in the 2022 Scoping Plan. Instead, evaluating consistency with the State’s emissions reduction targets for 2030 and 2045 shows alignment with the State’s approach to reduce the generation of GHG emissions from existing and anticipated future sources by 85 percent compared to 1990 levels, a key component of the ARB 2022 Scoping Plan.

Comparison of the proposed Project’s amortized construction plus operational emissions in terms of efficiency relative to the employment served by the Project allows an assessment of the Project’s ability to provide a “fair share” of the emissions reduction required for the State to achieve the GHG reductions for 2030 and 2045, avoid a conflict with the State’s goal of carbon neutrality by 2045, and demonstrate consistency with the State Scoping Plan.

If the proposed Project would achieve the efficiency thresholds, it would demonstrate that implementation of the proposed Project would generate GHG emissions at a level that would be consistent with State legislation in the near-term (i.e., SB 32) and long-term over the lifetime of the Project as it continues to generate GHG emissions (i.e., AB 1279). Similarly, consistency with the BAAQMD criterion for significance demonstrate consistency with actions identified by BAAQMD as necessary of a new development project to do its “fair share” for the State to achieve its long-term goal of carbon neutrality by 2045 and consistency with the State Scoping Plan. Therefore, both of the CEQA Guidance Appendix G checklist questions for GHG emissions are evaluated under a single impact discussion using the above detailed GHG efficiency metric.

IMPACT ANALYSIS

Impact 4.6-1 *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. This impact would be **cumulatively considerable**.*

GHG emissions have the potential to adversely affect the environment because such emissions contribute cumulatively to global climate change. It is unlikely that a single project will contribute significantly to climate change, but cumulative emissions from many projects could affect global GHG concentrations and the climate system. Therefore, impacts are analyzed within the context of the proposed Project’s potential contribution to the cumulatively significant impact of climate change. The proposed Project would generate GHG emissions as a result of short-term construction and long-term operational activities.

The analysis for GHG emissions in this section is unique in relation to the environmental baseline. Instead of focusing on the difference between the existing baseline and conditions with implementation of the proposed Project, the analysis considers GHG emissions with implementation of the proposed Project in relation to State targets and goals for GHG emissions reduction.

Project GHG Efficiency

In order to calculate the GHG efficiency of the proposed Project, GHG emissions from construction and operation of the proposed Project were calculated and amortized construction emissions were added to annual operational emissions. The proposed Project’s annual emissions (inclusive of amortized construction and annual operational emissions) are divided by the proposed Project’s service population to determine whether the proposed Project is

efficient enough to provide its fair share of the State’s emissions reduction targets. The service population for the proposed Project is the approximately 1,275 employees that would be accommodated by the proposed Project. Please see Appendix B of this Draft EIR for modeling details, assumptions, inputs, and outputs.

During construction of the proposed Project, exhaust GHG emissions would be generated from a variety of sources such as heavy-duty construction and clearing equipment, haul trucks, material delivery trucks, and construction worker vehicles. Construction would be short term, occurring in phases, and anticipated to last approximately 28 months in total, and the generation of construction-related GHG emissions would cease at the end of construction. As noted above in the discussion of *Thresholds of Significance*, total construction-related GHG emissions were amortized over 30 years and added to the total Project annual operational emissions. This approach accounts for the persistence of GHG emissions in the environment (in other words, the temporary emission sources result in emissions that persist over many years), and also ensures that mitigation measures account for construction GHG emissions as part of the total emissions considered and mitigated.

Operational GHG emissions can be direct and indirect. Direct GHG emissions are generated at the location of consumption or use; for example, mobile-source emissions are direct emissions because GHG emissions are generated directly by the vehicle as exhaust. Other direct emissions sources include on-site natural gas use, backup generators, onsite yard equipment, TRU operations, and fugitive emissions from refrigerant use in equipment such as air conditioning units and freezers. Conversely, indirect emissions occur at a different time or location from the point of consumption or use. For example, electricity-related GHG emissions are indirect emissions because, as consumers use electricity at their workplace, the fuel combustion and emissions associated with creating that electricity likely occurred off-site or at a different time. Other indirect GHG emissions include emissions from solid waste disposal and water consumption.

As noted above, the proposed Project’s GHG emissions are evaluated against efficiency thresholds for 2030 and for 2045, based on the emissions reduction targets in SB 32 and AB 1279, respectively. These GHG emissions efficiency thresholds were derived to be specific for this location, tailored for this specific Project, and appropriate for *new* development. In creating this efficiency threshold, emissions sources not relevant to Suisun City and Solano County or to the proposed Project were removed from consideration in building the emissions efficiency threshold. Similarly, inapplicable employment estimates were removed when building the efficiency threshold, so that the threshold was tailored to apply to emissions sources related to the proposed Project. For example, as noted earlier, jobs that do not exist in Solano County and are not relevant to the project were removed from consideration and emissions related to agriculture and forestry, mining, petroleum refining, and waterborne transportation emissions were removed from consideration in the efficiency threshold since these jobs and emissions do not exist within the City. The emissions rate, when combined with the methodology for estimating Project-related emissions is also designed to be appropriate for *new* development (as opposed to existing, on-the-ground development).

In order to calculate the GHG efficiency of the proposed Project, emissions for the proposed Project were estimated for the initial operating years (phased, assumed to start in 2025 and conservatively assumed to reach full operations in 2026) for evaluation against the 2030 threshold. Please see Appendix B to this Draft EIR for modeling details, assumptions, inputs, and outputs.

Table 4.6-2 presents the maximum annual, total, and amortized construction-related GHG emissions. Table 4.6-3 presents the annual operational emissions by source for the initial fully operating year of 2026 and operations in

2045, as well as the total proposed Project emissions, summing the amortized construction and total annual operational emissions for each year. Table 4.6-3 also shows the proposed Project’s GHG efficiency in 2030 and compares this to the Project-specific thresholds for each 2030.

Table 4.6-2. Proposed Project Construction-Related GHG Emissions

Construction Year	Emissions (MT CO ₂ e)
Construction 2024	1,474
Construction 2025	828
Construction 2026	220
Total Construction	2,521
Annual Construction Amortized over 30 years	84

Notes:

GHG = greenhouse gas emissions; MT CO₂e = metric tons of carbon dioxide equivalents

See Appendix B for detailed calculations and inputs.

Table 4.6-3. Proposed Project GHG Efficiency in the Year 2026

Proposed Project Emissions Source	GHG Emissions of the Proposed Project in 2026 (MT CO ₂ e)
Visiting Trucks	22,364
Worker Passenger Vehicles	2,232
Transportation Refrigeration Units	4,672
Electricity	3,049
Natural Gas	337
Fugitive Refrigerants	5,631
Yard Equipment (e.g., forklifts)	681
Stationary (e.g. backup generators and fire pumps)	46
Area Sources	19
Water Use	585
Waste Generation	375
Total Annual Operational Emissions	39,993
Annual Construction Amortized over 30 years¹	84
Total Project Annual Emissions (Operational + Amortized Construction)	40,077
Proposed Project Service Population (Employees)	1,275
Proposed Project GHG Efficiency (MT CO₂e per service population)	31.43
2030 GHG Efficiency Target (MT CO₂e per service population)	13.98
Project Consistent with GHG Efficiency Target?	No

Notes:

GHG = greenhouse gas emissions; MT CO₂e = metric tons of carbon dioxide equivalents

See Appendix B for detailed calculations and inputs.

¹ See Table 4.6-2 for detailed construction emissions by year and total construction emissions.

As shown in Table 4.6-3, the proposed Project’s emissions would be higher than the Project-specific 2030 GHG efficiency threshold. The primary emission sources associated with the proposed Project is mobile activity, which is primarily the result of visiting truck travel. As explained above, the proposed Project’s GHG efficiency

assumes all emissions sources related to the proposed Project are created by the proposed Project, regardless of whether the proposed Project would serve demand that would otherwise be served in another facility. In addition, the service population accounted for in the denominator of the calculation to determine the project's GHG efficiency *only* accounts for the proposed Project's on-site employees, not visiting truck drivers.

Because the Project's GHG efficiency would exceed the 2030 GHG efficiency target, implementation of the proposed Project could result in the generation of GHG emissions at a level that result in a **cumulatively considerable** contribution to the significant cumulative impact of climate change and conflict with State GHG emission targets adopted for the purpose of reducing GHG emissions. This impact is **cumulatively considerable**.

Mitigation Measures

Mitigation Measure 4.6-1a: Use Battery or Electric-powered Construction Equipment

The Project applicant shall require that construction contractor(s):

- Where grid power is available, prohibit portable diesel engines and provide electrical hook ups for electric construction tools, such as saws, drills and compressors, and using electric tools whenever feasible.
- Where grid power is not available, use alternative fuels, such as propane or solar electrical power, for generators at construction sites.
- Use battery-powered equipment for all off-road construction equipment with a power rating below 19kW (e.g., plate compactors, pressure washers) during construction.

Prior to the issuance of grading permits for the Project, the Project applicant shall include all requirements in applicable bid documents, purchase orders, and contracts, with successful contractors demonstrating the ability to supply the compliant on- or off-road construction equipment for use prior to any ground-disturbing and construction activities.

Mitigation Measure 4.6-1b: Reduce Construction Worker Travel for Meals

The Project applicant shall provide meal options on-site or shuttles between the facility and nearby meal destinations for construction employees.

Mitigation Measure 4.6-c: Limit Model Year of On-road Heavy Duty Haul Trucks

The Project applicant shall require the construction contractor(s) use on-road heavy-duty haul trucks to be model year 2014 or newer if diesel-fueled.

Mitigation Measure 4.6-1d: Limit Idling of Heavy-Duty Construction Equipment & Trucks

The Project applicant shall require the construction contractor(s) forbid the idling of construction equipment and trucks, if diesel-fueled, for more than two minutes. The Project applicant or construction contractor(s) shall provide appropriate signage onsite communicating this requirement to onsite equipment operators.

Mitigation Measure 4.6-1e: Omit the Inclusion of Natural Gas Infrastructure.

The City shall require the Project applicant to omit the inclusion of natural gas infrastructure in the design and construction of the proposed Project. The final design drawings must demonstrate the omission of natural gas connections to the Project Site and be provided to and approved by the City prior to the issuance of grading permits.

Mitigation Measure 4.7-1f: Source Electricity for Project Operations from a Power Mix that is 100 Percent Carbon-free.

Electricity to serve the Project Site shall be supplied from a power mix that comprises 100 percent carbon-free electricity sources. The Project applicant shall provide the City with documentation, to the City's satisfaction, demonstrating the Project's electricity demand, including that of electric vehicle charging stations and other onsite electric infrastructure required to support electrification of the onsite offroad equipment, will be supplied with 100 percent carbon-free electricity sources. These sources may include, but are not limited to, on-site renewable generation system(s) or Pacific Gas and Electric Company (PG&E) 100 percent solar electricity service option, or a similar 100 percent carbon-free utility option that becomes available in the future and meets the requirements of this mitigation measure.

To ensure that 100 percent of the Project's electricity demand generated by the proposed Project is supplied with 100 percent carbon-free electricity sources, the project applicant or other appropriate Project Site operations manager shall maintain records for all electricity consumption and supply associated with the proposed Project's operation and make these records available to the City upon request. These records shall be maintained until such time as the only grid-available power options are inherently carbon-free and this mitigation does not serve to provide any additional Project requirements to reduce electricity-related GHG emissions.

Mitigation Measure 4.6-1g: Implement Mitigation Measure 4.12-1, Transportation Demand Management (TDM) Plan.

Mitigation Measure 4.6-1h: Incorporate CALGreen Tier 2 Standards for Electric Vehicle Infrastructure into Project Design.

The City shall require the Project applicant to include electric vehicle (EV) capable parking at the rate consistent with the California Green Building Standards Code (CALGreen) Tier 2 standards for the proposed Project land use. The EV capable parking shall include the installation of the enclosed conduit that forms the physical pathway for electrical wiring and adequate panel capacity to accommodate future installation of a dedicated branch and charging stations(s). The total EV capable parking to be provided shall be based on the proposed size and scale of development and the most current CALGreen Tier 2 standards at the time of the application for a building permit.

Mitigation Measure 4.6-1i: Electrification of Yard Equipment

The Project applicant shall stipulate in tenant lease agreements that all yard equipment and similar on-site off-road equipment, such as forklifts, be electric. Prior to the issuance of an occupancy permit, the Project applicant shall provide the City with documentation, to the City's satisfaction, demonstrating that the building occupant shall only use on-site off-road equipment that is electric-powered.

Mitigation Measure 4.6-1j: Electrification of Transportation Refrigeration Units

The Project applicant shall require that all transportation refrigeration units operating on the Project Site be electric or alternative zero-emissions technology, including hydrogen fuel cell transport refrigeration and cryogenic transport refrigeration, to reduce emissions of NO_x without substantially increasing other emissions. Any electric or hybrid transportation refrigeration units shall be charged via grid power (i.e., not an idling truck or diesel engine). The Project design shall also include necessary infrastructure; for example, requiring all dock doors serving transportation refrigeration units to be equipped with charging infrastructure to accommodate the necessary plug-in requirements for electric transportation refrigeration units while docked or otherwise idling, as well as the electrical capacity to support the on-site power demand associated with electric transportation refrigeration unit charging requirements.

Mitigation Measure 4.6-1k: Prohibition of Truck Idling for More than Two Minutes

The Project applicant shall require that onsite idling of all visiting gasoline- or diesel-powered trucks not exceed two minutes, and that appropriate signage and training for on-site workers and truck drivers be provided to support effective implementation of this limit.

Mitigation Measure 4.6-1l: Limitation of Model Year of Visiting Trucks

The Project applicant shall require that lease agreements stipulate that any gasoline- or diesel-powered vehicle, whether owned or operated by tenant(s), that enters or operates on the Project Site and has a gross vehicle weight rating greater than 14,000 pounds, have a model year dated no older than model year 2014.

Mitigation Measure 4.6-1m: Use of Reduced GWP Refrigerants

Future buildings and tenants using cold storage shall use R-407F or class of refrigerant that has an equivalent or lower global warming potential (i.e., global warming potential of 1,825 or less). The Project applicant shall require that lease agreements stipulate that any refrigeration units operated on-site meet these requirements and that equipment specifications and maintenance records demonstrating system and refrigerant type and compliance with service and maintenance requirements to minimize fugitive leaks.

Mitigation Measure 4.6-1n: Purchase and Retire GHG Emissions Credits.

The Project applicant shall purchase and retire greenhouse gas (GHG) emissions credits for the proposed Project. Prior to the issuance of a building permit, the Project applicant shall provide documentation for review and approval by the City, that demonstrates consistency with the requirements of this mitigation measure, including the specific performance standards outlined below regarding the credit program selected.

The Project applicant shall purchase and retire GHG emissions credits in an amount sufficient to reduce the proposed Project's annual amortized construction and operational emissions, after implementation of Mitigation Measures 4.6-1a through 4.6-1m, to a level considered less than cumulatively considerable based upon the 2030 GHG efficiency threshold of 13.98 MT CO_{2e} per employee and the State's target of an 85 percent reduction from 1990 levels by 2045, represented by the 2045 GHG efficiency threshold of 3.32 MT CO_{2e} per employee. The Project applicant shall purchase and retire GHG emissions credits sufficient to meet such requirements for operations through 2055, which reflects the assumed 30-year lifetime of the proposed Project. Total amortized construction emissions plus operational emissions, with

implementation of Mitigation Measures 4.6-1a through 4.6-1m, and required GHG credits were estimated the 30-year Project lifetime. Based on these timelines and the Project's operational emissions between 2025 and 2055, the total required amount credits is currently estimated to be 358,128 MT CO₂e for the life of the Project.

The purchase and retirement of credits may occur through one of the following programs, which are all developed consistent with ARB's offset protocols: (i) a California Air Resources Board (CARB) approved registry, such as the Climate Action Reserve, California Offsets through the American Carbon Registry, and the Verified Carbon Standard; (ii) any registry approved by CARB to act as a registry under the California Cap and Trade program; or (iii) through the California Air Pollution Control Officers Association (CAPCOA) GHG Rx. Such credits shall be based on protocols approved by ARB, consistent with Section 95972 of Title 17 of the California Code of Regulations, and shall not allow the use of offset projects originating outside of California. Off-site mitigation credits shall be real, additional, quantifiable, verifiable, enforceable, permanent, consistent with the standards set forth in Health and Safety Code section 38562, subdivisions (d)(1) and (d)(2) and that satisfy all of the following criteria:

- Real: emission reduction must have actually occurred, yielding quantifiable and verifiable reductions or removals determined using appropriate, accurate, and conservative methodologies that account for all GHG emissions sources, GHG sinks, and GHG reservoirs within the offset project boundary and account for uncertainty and the potential for activity-shifting leakage and market-shifting leakage.
- Additional: an emission reduction cannot be required by an existing law, rule, or other requirement that applies directly to the proposed Project, or otherwise have occurred in a conservative business-as-usual scenario, consistent with CEQA Guidelines Section 15126.4(c)(3) and Health and Safety Code section 38562(d)(2). One carbon offset credit shall mean the past reduction or sequestration of one metric ton of carbon dioxide equivalent that is 'not otherwise required', consistent with CEQA Guidelines Section 15126.4(c)(3).
- Quantifiable: reductions must be quantifiable through tools or tests that are reliable, based on applicable methodologies, relative to the proposed project baseline in a reliable and replicable manner for all GHG emission sources and recorded with adequate documentation.
- Verifiable: the action taken to produce credits can be audited by an accredited verification body and there is sufficient evidence to show that the reduction occurred and was quantified correctly.
- Enforceable: an enforcement mechanism must exist to ensure that the reduction project is implemented correctly.
- Permanent: emission reductions or removals must continue to occur for the expected life of the reduction project (i.e., not be reversible, or if the reductions may be reversible, that mechanisms are in place to replace any reversed GHG emissions reductions).

The purchase and retirement of credits shall be prior to the issuance of any grading permit for the Project. Purchase and retirement of credits can also occur for multiple years in advance up to the total purchase requirement described above.

The applicant shall provide the City with evidence of the purchase and retirement of credits in adequate amounts and appropriate timing to achieve the 2030 and 2045 efficiency thresholds. If the entire amount is retired up-front, the applicant shall provide the City evidence of the purchase and retirement prior to

approval of any building permit associated with the project. If the reduction credits are purchased annually, the applicant shall provide evidence to the City prior to the annual renewal of the business license. The evidence of purchase and retirement of credits shall include (i) the applicable protocol(s) and methodologies associated with the carbon offsets, (ii) the third-party verification report(s) and statement(s) affiliated with the carbon offset projects, and (iii) the unique serial numbers assigned by the registry(ies) to the carbon offsets to be retired, which serves as evidence that the registry has determined the carbon offset project to have been implemented in accordance with the applicable protocol or methodology and ensures that the offsets cannot be further used in any manner.

Significance after Mitigation

Implementation of Mitigation Measures 4.6-1a through 4.6-1d would reduce emissions associated with offroad equipment use during Project construction. Mitigation Measures 4.6-1e through 4.6-1m would reduce emissions associated with natural gas use, electricity consumption, worker vehicle and truck travel and idling, TRU operations, use of onsite offroad equipment such as forklifts, and backup generators. Implementation of these mitigation measures would reduce the Project’s generation of GHG emissions to support the Project’s fair share contribution emissions reductions toward the State GHG reduction mandates and the State’s goal of statewide carbon neutrality. The Project’s GHG emissions and GHG efficiency with implementation of these measures are presented in Table 4.6-4. The table presents the proposed Project’s GHG emissions with mitigation as applicable in 2026 (i.e., not yet implementing Mitigation Measure 4.6-1m for all zero-emission trucks) and for operations with all mitigation measures implemented in 2045. As shown in this table, even with implementation of Mitigation Measures 4.6-1a through 4.6-1m, the proposed Project would still exceed the GHG efficiency thresholds for 2030 and for 2045.

Table 4.6-4. Mitigated Proposed Project GHG Efficiency in the Years 2026 and 2045

Proposed Project Emissions Source	Mitigated GHG Emissions in 2026 (MT CO₂e)	Mitigated GHG Emissions in 2045 (MT CO₂e)
Visiting Trucks	22,209	14,829
Worker Passenger Vehicles	1,897	1,437
Transportation Refrigeration Units	-	-
Electricity	-	-
Natural Gas	-	-
Fugitive Refrigerants	2,620	2,620
Yard Equipment (e.g., forklifts)	-	-
Stationary (e.g. backup generators and fire pumps)	16	16
Area Sources	6	6
Water Use	585	585
Waste Generation	375	375
Total Annual Operational Emissions	27,707	19,866
Annual Construction Amortized over 30 years¹	84	84
Total Project Annual Emissions (Operational + Amortized Construction)	27,791	19,950
Proposed Project Service Population (Employees)	1,275	1,275

Proposed Project Emissions Source	Mitigated GHG Emissions in 2026 (MT CO ₂ e)	Mitigated GHG Emissions in 2045 (MT CO ₂ e)
Proposed Project GHG Efficiency (MT CO₂e per service population)	21.80	15.65
2030 GHG Efficiency Target (MT CO₂e per service population)	13.98	3.32
Project Consistent with GHG Efficiency Target?	No	No

Notes:

GHG = greenhouse gas emissions; MT CO₂e = metric tons of carbon dioxide equivalents

See Appendix B for detailed calculations and inputs.

¹ See Table 4.6-2 for detailed construction emissions by year and total construction emissions.

Mitigation Measure 4.6-1n further reduces the proposed Project’s impacts related to the generation of GHG emissions, as it requires the purchase and retirement of GHG emissions credits based on protocols approved by ARB, consistent with Section 95972 of Title 17 of the California Code of Regulations. Mitigation Measure 4.6-1n also requires the Project applicant to provide documentation demonstrating that the mitigation credits are real, additional, quantifiable, verifiable, enforceable, permanent, and consistent with the standards set forth in Health and Safety Code section 38562, subdivisions (d)(1) and (d)(2). Mitigation Measure 4.6-1n would ensure that the Project’s GHG emissions efficiency would be consistent with that of the State SB 32 regulatory GHG emissions reduction target for 2030 and with the State AB 1279 regulatory GHG emissions reduction target for 2045 over the long-term operations of the Project. Therefore, with implementation of Mitigation Measures 4.6-1a through 1n, the generation of GHG emissions associated with the proposed Project would not result in a substantial contribution to the significant impact of climate change or conflict with an applicable plan, policy, or regulation adopted for the purposes of reduction GHG emissions. However, the City cannot guarantee the availability of emissions credits meeting the standards outlined in Mitigation Measures 4.6-1n presented above. There is no additional feasible mitigation available. Therefore, with implementation of Mitigation Measures 4.6-1a through 4.6-1n, the Project construction and operations would be **cumulatively considerable and significant and unavoidable**.

Impact 4.6-2 Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation, or conflict with or obstruction of a State or local plan for renewable energy or energy efficiency. *Implementation of the proposed Project would result in energy consumption for the duration of the proposed Project’s construction phases in the form of electricity, natural gas, and fossil fuels (e.g., gasoline, diesel fuel). Implementation of the proposed Project would also require energy for operational phases. The proposed Project would not result in an unnecessary or wasteful use of energy and would not conflict with a state or local plan for renewable energy or energy efficiency. Therefore, this impact would be less than significant.*

Construction-Related Energy Consumption

Implementation of the proposed Project would increase the consumption of energy for the duration of construction in the form of electricity, natural gas, and fossil fuels (e.g., gasoline, diesel fuel). The primary energy demands during construction would be fuel consumption associated with offroad equipment and vehicle use. Energy in the form of fuel and electricity would be consumed during this period by construction vehicles and equipment operating on-site, trucks delivering equipment and supplies to the site, and construction workers driving to and from the site. Fuel use was estimated for construction equipment and vehicles, including construction worker commute trips, equipment and material deliveries, and haul truck trips (see Appendix B).

Over the approximately 28-month construction period, inclusive of all phases of the Project Site development and mitigation wetland construction, the proposed Project would require approximately 60,466 gallons of diesel and 37,091 gallons of gasoline. The proposed Project could also involve the use of battery-powered smaller equipment and on-site electric-powered equipment when such grid power is available, the use of which would supplant the need for gasoline and diesel fuel.

The proposed Project does not include unusual characteristics that would necessitate the use of construction equipment that would be less energy-efficient than at comparable construction sites. Material resulting from any site preparation and trenching would be reused to the extent feasible, in accordance with CALGreen standards for the diversion of non-hazardous waste. Construction equipment and personnel would be staged within the boundaries of the Project Site, and on-site idling of heavy-duty equipment would be limited to no more than 5 minutes, in accordance with California Code of Regulations Title 13, Sections 2485 and 2449.

State plans adopted for the purpose of promoting energy efficiency include the California Renewable Portfolio Standard, the Clean Energy and Pollution Reduction Act of 2015 (SB 350), the California Energy Efficiency Standards for Nonresidential Buildings, and the CALGreen Code. Construction activities under the proposed Project would be conducted in accordance with all applicable laws and regulations, including applicable federal, state, and local laws that are intended to promote efficient utilization of resources and minimize environmental impacts.

Therefore, construction activities associated with the proposed Project would not result in inefficient, wasteful, or unnecessary use of fuel or other energy sources and would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This impact would be **less than significant**.

Operational Energy Consumption

Energy for operation of proposed Project would be required for heating and cooling of buildings, lighting, mechanical equipment, warehousing and logistics equipment, vehicle travel, and other needs.

Using CalEEMod, electrical and natural gas demands were modeled to estimate building (and parking area) energy use based on the proposed land uses. Energy demands of the proposed Project would be approximately 32,634 megawatt-hours per year for electricity and 6,331 million British thermal units of natural gas, based on energy consumption rates developed for CalEEMod. In addition, fuel consumption associated with worker passenger vehicle and visiting truck trips, as well as onsite equipment use, was calculated. Estimated annual fuel consumption for Project operations would be approximately 245,645 gallons of gasoline and 1,067 gallons of diesel fuel.

The proposed buildings would be constructed to meet all applicable energy efficiency standards at the time of construction and would be required to comply with the current energy performance standards found in Title 24 of the California Code of Regulations, including the Green Building Code (Part 11 of Title 24) Building Energy Efficiency Standards. These energy efficiency standards ensure that building energy consumption would not be wasteful, inefficient, or unnecessary. In addition, the Project Site is adjacent to SR 12 and provides convenient and efficient regional access for trucks and also provides local job opportunities for local residence of Suisun City and the surrounding communities that may otherwise commute further (see Section 4.9, Land Use & Planning, Population and Housing). Thus, building operations and operational transportation fuel consumption would not be wasteful, inefficient, or unnecessary. Impacts would be **less than significant**.

Mitigation Measures

No mitigation measures are required.