4.6 GREENHOUSE GAS

This section of the Environmental Impact Report (EIR) evaluates greenhouse gas (GHG) emissions associated with the proposed project and analyzes project compliance with applicable regulations. Consideration of the project's consistency with applicable plans, policies, and regulations, as well as the introduction of new sources of GHGs, is provided. Appendix C to this EIR and includes:

- Air Quality and GHG modeling assumptions and output results.
- Climate Action Plan Checklist.

4.6.1 ENVIRONMENTAL SETTING

GREENHOUSE GASES AND CLIMATE CHANGE

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 toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation 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.

The primary GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change.

GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms of carbon sequestration. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years,

whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere.[1] *Table 4.6-1: Description of Greenhouse Gases* describes the primary GHGs attributed to global climate change, including their physical properties.

Table 4.6-1: Description of Greenhouse Gases

Greenhouse Gas	Description
Carbon Dioxide (CO_2)	CO_2 is a colorless, odorless gas that is emitted naturally and through human activities. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, and industrial facilities. The atmospheric lifetime of CO_2 is variable because it is readily exchanged in the atmosphere. CO_2 is the most widely emitted GHG and is the reference gas (Global Warming Potential of 1) for determining Global Warming Potentials for other GHGs.
Nitrous Oxide (N_2O)	N_2O is largely attributable to agricultural practices and soil management. Primary human-related sources of N_2O include agricultural soil management, sewage treatment, combustion of fossil fuels, and adipic and nitric acid production. N_2O is produced from biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years. The Global Warming Potential of N_2O is 298.
Methane (CH_4)	Methane, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. Methane is the major component of natural gas, about 87 percent by volume. Human-related sources include fossil fuel production, animal husbandry, rice cultivation, biomass burning, and waste management. Natural sources of CH_4 include wetlands, gas hydrates, termites, oceans, freshwater bodies, non-wetland soils, and wildfires. The atmospheric lifetime of CH_4 is about 12 years and the Global Warming Potential is 25.
Hydrofluorocarbons (HFCs)	HFCs are typically used as refrigerants for both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is increasing, as the continued phase-out of Chlorofluorocarbons (CFCs) and HCFCs gains momentum. The 100-year Global Warming Potential of HFCs range from 124 for HFC-152 to 14,800 for HFC-23.
Perfluorocarbons (PFCs)	PFCs have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Global Warming Potentials range from 6,500 to 9,200.
Chlorofluorocarbons (CFCs)	CFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. The Montreal Protocol on Substances that Deplete the Ozone Layer prohibited their production in 1987. Global Warming Potentials for CFCs range from 3,800 to 14,400.
Sulfur Hexafluoride (SF_6)	SF_6 is an inorganic, odorless, colorless, and non-toxic, non-flammable gas. It has a lifetime of 3,200 years. This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas. The Global Warming Potential of SF_6 is 23,900.
Hydrochlorofluorocarbons (HCFCs)	HCFCs are solvents, similar in use and chemical composition to CFCs. The main uses of HCFCs are for refrigerant products and air conditioning systems. As part of the Montreal Protocol, HCFCs are subject to a consumption cap and gradual phase-out. The United States is scheduled to achieve a

[1] Intergovernmental Panel on Climate Change, *Carbon and Other Biogeochemical Cycles. In: Climate Change 2013: The Physical Science Basis*, *Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2013. http://www.climatechange2013.org/ images/report/WG1AR5_ALL_FINAL.pdf.

Greenhouse Gas	Description
	100 percent reduction to the cap by 2030. The 100-year Global Warming Potentials of HCFCs range from 90 for HCFC-123 to 1,800 for HCFC-142b.
Nitrogen trifluoride	Nitrogen trifluoride (NF_3) was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. This gas is used in electronics manufacture for semiconductors and liquid crystal displays. It has a high global warming potential of 17,200.

Source: Compiled from U.S. EPA, *Overview of Greenhouse Gases*, April 11, 2018 (https://www.epa.gov/ghgemissions/overview-greenhouse-gases); U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016*, 2018; IPCC *Climate Change 2007: The Physical Science Basis*, 2007; National Research Council, Advancing the Science of Climate Change, 2010; U.S. EPA, *Methane and Nitrous Oxide Emission from Natural Sources*, April 2010.

CO_2 is the reference gas for climate change because it is the predominant GHG emitted. The effect that each of the aforementioned gases can have is a combination of the mass of their emissions and their global warming potential (GWP). GWP indicates, on a pound-for-pound basis, how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO_2. For example, CH_4 and N_2O are substantially more potent GHGs than CO_2, with GWPs of 25 and 298 times that of CO_2, respectively.

In emissions inventories, GHG emissions are typically reported in terms of metric tons of CO_2 equivalents ($MTCO_2e$). $MTCO_2e$ are calculated as the product of the mass emitted of a given GHG and its specific GWP. While CH_4 and N_2O have much higher GWPs than CO_2, CO_2 is emitted in such vastly higher quantities that it accounts for the majority of GHG emissions in carbon dioxide equivalents (CO_2e), both from residential developments and human activity in general.

Potential Effects of Human Activity on GHG Emissions

Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO_2 emissions (and thus substantial increases in atmospheric concentrations). In 1994, atmospheric CO_2 concentrations were found to have increased by nearly 30 percent above pre-industrial (circa 1860) concentrations.

There is international scientific consensus that human-caused increases in GHGs have contributed and would continue to contribute to global warming. Potential global warming impacts in California may include, but are not limited to, loss in snowpack, sea-level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include the displacement of thousands of coastal businesses and residences, impacts on agriculture, changes in disease vectors, and changes in habitat and biodiversity. As the CARB Climate Change Scoping Plan noted, the legislature in enacting Assembly Bill (AB) 32 found that global warming would cause detrimental effects to some of the state's largest industries, including agriculture, winemaking, tourism, skiing, commercial and recreational fishing, forestry, and the adequacy of electrical power generation. The Climate Change Scoping Plan states as follows: "The impacts of global warming are already being felt in California. The Sierra snowpack, an important source of water supply for the state, has shrunk 10 percent in the last 100 years. It is expected to continue to decrease by as much as 25 percent by 2050. World-wide changes are causing sea levels to rise – about 8 inches of increase has been recorded at the Golden Gate

Bridge over the past 100 years – threatening low coastal areas with inundation and serious damage from storms." AB 32 is discussed further below under Regulatory Setting.

4.6.2 REGULATORY SETTING

The following sections provide federal, State, and local regulations for GHGs and global climate change. These agencies work jointly, as well as individually, to understand and regulate the effects of GHG emissions and resulting climate change through legislation, regulations, planning, policy-making, education, and a variety of programs.

FEDERAL

No national standards have been established for nationwide GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level. Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (December 2007), among other key measures, requires the following, which would aid in the reduction of national GHG emissions:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

U.S. Environmental Protection Agency Endangerment Finding

The U.S. EPA authority to regulate GHG emissions stems from the U.S. Supreme Court decision in Massachusetts v. EPA (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, the U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs (carbon dioxide [CO_2], methane [CH_4], nitrous oxide [N_2O], hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF_6]) constitute a threat to public health and welfare. Therefore, it is the Supreme Court's interpretation of the existing Act and the U.S. EPA's assessment of the scientific evidence that form the basis for the U.S. EPA's regulatory actions.

Federal Vehicle Standards

In response to the U.S. Supreme Court ruling discussed above, Executive Order 13432 was issued in 2007 directing the U.S. EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the U.S. EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, an Executive Memorandum was issued directing the Department of Transportation, Department of Energy, U.S. EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the U.S. EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking. On January 12, 2017, the U.S. EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks. It should be noted that the U.S. EPA is currently proposing to freeze the vehicle fuel efficiency standards at their planned 2020 level (37 mpg), canceling any future strengthening (currently 54.5 mpg by 2026).

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the U.S. EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the U.S. EPA, this regulatory program would reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baselines.

In August 2016, the U.S. EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program would apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program.

Clean Power Plan and New Source Performance Standards for Electric Generating Units

On October 23, 2015, the U.S. EPA published a final rule (effective December 22, 2015) establishing the carbon pollution emission guidelines for existing stationary sources: electric utility generating units (80 FR 64510–64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO_2 emission performance rates representing the best system of emission reduction for two

subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel-fired electric utility steam-generating units and (2) stationary combustion turbines. Concurrently, the U.S. EPA published a final rule (effective October 23, 2015) establishing standards of performance for GHG emissions from new, modified, and reconstructed stationary sources: electric utility generating units (80 FR 64661–65120). The rule prescribes CO_2 emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the Clean Power Plan pending resolution of several lawsuits. Additionally, in March 2017, the federal government directed the U.S. EPA Administrator to review the Clean Power Plan in order to determine whether it is consistent with current executive policies concerning GHG emissions, climate change, and energy.

Presidential Executive Order 13783

Presidential Executive Order 13783, Promoting Energy Independence and Economic Growth (March 28, 2017), orders all federal agencies to apply cost-benefit analyses to regulations of GHG emissions and evaluations of the social cost of carbon, nitrous oxide, and methane.

STATE

The California Air Resources Board (CARB) is responsible for the coordination and oversight of State and local air pollution control programs in California. Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness about climate change and its potential for severe long-term adverse environmental, social, and economic effects. California is a significant emitter of CO_2e in the world and produced 440 million gross metric tons of CO_2e in 2015. In the State, the transportation sector is the largest emitter of GHGs, followed by industrial operations such as manufacturing and oil and gas extraction.

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation, such as the landmark AB 32 California Global Warming Solutions Act of 2006, was specifically enacted to address GHG emissions. Other legislation, such as Title 24 building efficiency standards and Title 20 appliance energy standards, were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major legislation related to GHG emissions reduction.

California Environmental Quality Act and Climate Change

Under CEQA, lead agencies are required to disclose the reasonably foreseeable adverse environmental effects of projects they are considering for approval. GHG emissions have the potential to adversely affect the environment because they contribute to global climate change. In turn, global climate change has the potential to raise sea levels, alter rainfall and snowfall, and affect habitat.

Senate Bill 97 (CEQA: Greenhouse Gas Emissions)

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is a prominent environmental issue requiring analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency

guidelines for the feasible mitigation of GHG emissions and thresholds to analyze the effects of GHG emissions, as required by CEQA, no later than July 1, 2009. The California Natural Resources Agency was required to certify or adopt those guidelines by January 1, 2010. On December 30, 2009, the Natural Resources Agency adopted amendments to the State CEQA Guidelines, as required by SB 97. These State CEQA Guidelines amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. The amendments became effective March 18, 2010.

State CEQA Guidelines

The State CEQA Guidelines are embodied in the California Code of Regulations (CCR), Public Resources Code, Division 13, starting with Section 21000. State CEQA Guidelines section 15064.4 specifically addresses the significance of GHG emissions, requiring a lead agency to make a "good-faith effort" to "describe, calculate or estimate" GHG emissions in CEQA environmental documents. Section 15064.4 further states that the analysis of GHG impacts should include consideration of: (1) the extent to which the project may increase or reduce GHG emissions; (2) whether the project emissions would exceed a locally applicable threshold of significance; and (3) the extent to which the project would comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions." The CEQA Guidelines also state that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program (including plans or regulations for the reduction of greenhouse gas emissions) that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (State CEQA Guidelines §15064(h)(3)). The State CEQA Guidelines do not, however, set a numerical threshold of significance for GHG emissions.

The State CEQA Guidelines also include the following direction on measures to mitigate GHG emissions, when such emissions are found to be significant:

> Consistent with Section 15126.4(a), lead agencies shall consider feasible means, supported by substantial evidence and subject to monitoring or reporting, of mitigating the significant effects of greenhouse gas emissions. Measures to mitigate the significant effects of GHG emissions may include, among others:
>
> (1) Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision;
>
> (2) Reductions in emissions resulting from a project through implementation of project features, project design, or other measures;
>
> (3) Off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions;
>
> (4) Measures that sequester greenhouse gases; and
>
> (5) In the case of the adoption of a plan, such as a general plan, long range development plan, or plans for the reduction of greenhouse gas emissions,

mitigation may include the identification of specific measures that may be implemented on a project-by-project basis. Mitigation may also include the incorporation of specific measures or policies found in an adopted ordinance or regulation that reduces the cumulative effect of emissions.

Assembly Bill 32 (California Global Warming Solutions Act)

AB 32 instructs the CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. AB 32 directed CARB to set a GHG emissions limit based on 1990 levels, to be achieved by 2020. It set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

CARB Scoping Plan

CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that would be adopted to reduce California's GHG emissions. CARB determined that achieving the 1990 emissions level would require a reduction of GHG emissions of approximately 29 percent below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as "business-as-usual"). The Scoping Plan evaluates opportunities for sector-specific reductions; integrates early actions by CARB and the State's Climate Action Team and additional GHG reduction measures by both entities; identifies additional measures to be pursued as regulations; and outlines the adopted role of a cap-and-trade program. Additional development of these measures and adoption of the appropriate regulations occurred through the end of 2013. Key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards.
- Achieving a statewide renewables energy mix of 33 percent by 2020.
- Developing a California cap-and-trade program that links with other programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions (adopted in 2011).
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets (several Sustainable Communities Strategies have been adopted).
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, heavy-duty truck measures, the Low Carbon Fuel Standard (amendments to the Pavley Standard adopted 2009; Advanced Clean Car standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (adopted 2009).
- Creating targeted fees, including a public goods charge on water use, fees on gasses with high global warming potential, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation (CARB 2008).

In 2012, CARB released revised estimates of the expected 2020 emissions reductions. The revised analysis relied on emissions projections updated considering current economic forecasts that accounted for the economic downturn since 2008, reduction measures already approved and put in place relating to future fuel and energy demand, and other factors. This update reduced the projected 2020 emissions from 596 million metric tons of CO_2e ($MMTCO_2e$) to 545 $MMTCO_2e$. The reduction in forecasted 2020 emissions means that the revised business-as-usual reduction necessary to achieve AB 32's goal of reaching 1990 levels by 2020 is now 21.7 percent, down from 29 percent. CARB also provided a lower 2020 inventory forecast that incorporated State-led GHG emissions reduction measures already in place. When this lower forecast is considered, the necessary reduction from business-as-usual needed to achieve the goals of AB 32 is approximately 16 percent.

CARB adopted the first major update to the Scoping Plan on May 22, 2014. The updated Scoping Plan summarizes the most recent science related to climate change, including anticipated impacts to California and the levels of GHG emissions reductions necessary to likely avoid risking irreparable damage. It identifies the actions California has already taken to reduce GHG emissions and focuses on areas where further reductions could be achieved to help meet the 2020 target established by AB 32.

Senate Bill 32 (California Global Warming Solutions Act of 2006: Emissions Limit)

Signed into law in September 2016, SB 32 codifies the 2030 GHG reduction target in Executive Order B-30-15 (40 percent below 1990 levels by 2030). The bill authorizes CARB to adopt an interim GHG emissions level target to be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

With SB 32, the Legislature passed companion legislation, AB 197, which provides additional direction for developing the Scoping Plan. On December 14, 2017, CARB adopted a second update to the Scoping Plan[2]. The 2017 Scoping Plan details how the State would reduce GHG emissions to meet the 2030 target set by Executive Order B-30-15 and codified by SB 32. Other objectives listed in the 2017 Scoping plan are to provide direct GHG emissions reductions; support climate investment in disadvantaged communities; and support the Clean Power Plan and other federal actions.

SB 375 (The Sustainable Communities and Climate Protection Act of 2008)

Signed into law on September 30, 2008, SB 375 provides a process to coordinate land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction goals established by AB 32. SB 375 requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, aligns planning for transportation and housing, and creates specified incentives for the implementation of the strategies.

[2] California Air Resources Board, *California's 2017 Climate Change Scoping Plan,* https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed November 13, 2018.

AB 1493 (Pavley Regulations and Fuel Efficiency Standards)

California AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light-duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the U.S. EPA's denial of an implementation waiver. The U.S. EPA subsequently granted the requested waiver in 2009, which was upheld by the U.S. District Court for the District of Columbia in 2011. The regulations establish one set of emission standards for model years 2009–2016 and a second set of emissions standards for model years 2017 to 2025. By 2025, when all rules would be fully implemented, new automobiles would emit 34 percent fewer CO_2e emissions and 75 percent fewer smog-forming emissions.

SB 1368 (Emission Performance Standards)

SB 1368 is the companion bill of AB 32, which directs the California Public Utilities Commission to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 limits carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than five years from resources that exceed the emissions of a relatively clean, combined-cycle natural gas power plant. The new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. The California Public Utilities Commission adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 lbs. CO_2 per megawatt-hour (MWh).

SB 1078 and SBX1-2 (Renewable Electricity Standards)

SB 1078 (2002) requires California to generate 20 percent of its electricity from renewable energy by 2017. In 2005, SB 107 accelerated the due date of the 20 percent mandate to 2010 instead of 2017. These mandates apply directly to investor-owned utilities. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Executive Order S-21-09 also directed CARB to adopt a regulation by July 31, 2010, requiring the State's load-serving entities to meet a 33 percent renewable energy target by 2020. CARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. SBX1-2 (2011), which codified the 33 percent by 2020 goal.

SB 350 (Clean Energy and Pollution Reduction Act of 2015)

Signed into law on October 7, 2015, SB 350 implements the goals of Executive Order B-30-15. The objectives of SB 350 are to increase the procurement of electricity from renewable sources from 33 percent to 50 percent (with interim targets of 40 percent by 2024, and 25 percent by 2027) and to double the energy efficiency savings in electricity and natural gas end uses of retail customers through energy efficiency and conservation. SB 350 also reorganizes the Independent System Operator (ISO) to develop more regional electricity transmission markets and improve accessibility in these markets, which would facilitate the growth of renewable energy markets in the western United States.

Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs with executive orders. Although not regulatory, they set the tone for the State and guide the actions of State agencies.

Executive Order S-3-05

Executive Order S-3-05 was issued on June 1, 2005, which established the following GHG emissions reduction targets:

- By 2010, reduce greenhouse gas emissions to 2000 levels.
- By 2020, reduce greenhouse gas emissions to 1990 levels.
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that would stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

Executive Order S-01-07

Issued on January 18, 2007, Executive Order S 01-07 mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. The executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, CARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. CARB adopted the Low Carbon Fuel Standard on April 23, 2009.

Executive Order S-13-08

Issued on November 14, 2008, Executive Order S-13-08 facilitated the California Natural Resources Agency development of the 2009 California Climate Adaptation Strategy. Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order S-14-08

Issued on November 17, 2008, Executive Order S-14-08 expands the State's Renewable Energy Standard to 33 percent renewable power by 2020. Additionally, Executive Order S-21-09 (signed on September 15, 2009) directs CARB to adopt regulations requiring 33 percent of electricity sold in the State come from renewable energy by 2020. CARB adopted the "Renewable Electricity Standard" on September 23, 2010, which requires 33 percent renewable energy by 2020 for most publicly-owned electricity retailers.

Executive Order S-21-09

Issued on July 17, 2009, Executive Order S-21-09 directs CARB to adopt regulations to increase California's Renewable Portfolio Standard (RPS) to 33 percent by 2020. This builds upon SB 1078 (2002), which

established the California RPS program, requiring 20 percent renewable energy by 2017, and SB 107 (2006), which advanced the 20 percent deadline to 2010, a goal which was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II.

Executive Order B-30-15

Issued on April 29, 2015, Executive Order B-30-15 established a California GHG reduction target of 40 percent below 1990 levels by 2030 and directs CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of $MMCO_2e$. The 2030 target acts as an interim goal on the way to achieving reductions of 80 percent below 1990 levels by 2050, a goal set by Executive Order S-3-05. The Executive Order also requires the State's climate adaptation plan to be updated every three years and for the State to continue its climate change research program, among other provisions. With the enactment of SB 32 in 2016, the Legislature codified the goal of reducing GHG emissions by 2030 to 40 percent below 1990 levels.

California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

Title 20 Appliance Efficiency Regulations

The appliance efficiency regulations (California Code of Regulations Title 20, §§1601-1608) include standards for new appliances. Twenty-three categories of appliances are included in the scope of these regulations. These standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances.

Title 24 Building Energy Efficiency Standards

California's Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations Title 24, Part 6), was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to 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 2016 Building Energy Efficiency Standards approved on January 19, 2016 went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018 and take effect on January 1, 2020. Under the 2019 standards, homes would use about 53 percent less energy and nonresidential buildings would use about 30 percent less energy than buildings under the 2016 standards.

Title 24 California Green Building Standards Code

The California Green Building Standards Code (California Code of Regulations Title 24, Part 11 code) commonly referred to as the CALGreen Code, is a statewide mandatory construction code developed and adopted by the California Building Standards Commission and the Department of Housing and Community

Development. The CALGreen standards require new residential and commercial buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary measures (CALGreen Tier 1 and Tier 2) that local governments may adopt that encourage or require additional measures in the five green building topics. The most recent update to the CALGreen Code was adopted in 2019 and becomes effective on January 1, 2020.

Among the key mandatory provisions are requirements that new buildings:

- Reduce indoor potable water use by at least 20 percent below current standards;
- Recycle or salvage at least 50 percent of construction waste;
- Utilize low VOC-emitting finish materials and flooring systems;
- Install separate water meters tracking non-residential buildings' indoor and outdoor water use;
- Utilize moisture-sensing irrigation systems for larger landscape areas;
- Receive mandatory inspections by local officials of building energy systems, such as HVAC and mechanical equipment, to verify performance in accordance with specifications in non-residential buildings exceeding 10,000 square feet; and
- Earmark parking for fuel-efficient and carpool vehicles.

REGIONAL

Bay Area Air Quality Management District

BAAQMD is the regional agency with jurisdiction over the nine-county region located in the Basin. The Association of Bay Area Governments (ABAG), Metropolitan Transportation Commission (MTC), county transportation agencies, cities and counties, and various non-governmental organizations also join in the efforts to improve air quality through a variety of programs. These programs include the adoption of regulations and policies, as well as implementation of extensive education and public outreach programs.

Under CEQA, BAAQMD is a commenting responsible agency on air quality within its jurisdiction or impacting its jurisdiction. BAAQMD reviews projects to ensure that they would: (1) support the primary goals of the latest Air Quality Plan; (2) include applicable control measures from the Air Quality Plan; and (3) not disrupt or hinder implementation of any Air Quality Plan control measures.

In May 2010, BAAQMD adopted its updated CEQA Air Quality Guidelines as a guidance document to provide lead government agencies, consultants, and project proponents with uniform procedures for assessing air quality impacts and preparing the air quality sections of environmental documents for projects subject to CEQA. BAAQMD CEQA Air Quality Guidelines include methodologies and thresholds for addressing project and program level air quality and GHG emissions. The CEQA Air Quality Guidelines were called into question by an order issued March 5, 2012, in *California Building Industry Association (CBIA) v. BAAQMD* (Alameda Superior Court Case No. RGI0548693). The Alameda County Superior Court issued a judgment finding that BAAQMD had failed to comply with CEQA when it adopted the thresholds.

The court issued a writ of mandate ordering BAAQMD to set aside the thresholds and cease dissemination of them until BAAQMD had complied with CEQA. Notably, the court's ruling was based solely on BAAQMD's failure to comply with CEQA. The court did not reach any issues relating to the validity of the scientific reasoning underlying the recommended significance thresholds.

In August 2013, the Appellate Court struck down the lower court's order to set aside the thresholds. CBIA sought review by the California Supreme Court on three issues, including the Appellate Court's decision to uphold BAAQMD's adoption of the thresholds. The Supreme Court granted review on just one issue: Under what circumstances, if any, does CEQA require an analysis of how existing environmental conditions will impact future residents or users of a proposed project? In December 2015, the California Supreme Court confirmed that CEQA, with several specific exceptions, is concerned with the impacts of a project on the environment, not the effects the existing environment may have on a project. BAAQMD published a new version of its Guidelines dated May 2017, which includes revisions made to address the Supreme Court's opinion. BAAQMD is currently working on revising any outdated information in the Guidelines as part of its update to the State CEQA Guidelines and thresholds of significance.

Clean Air Plan

Air quality plans developed to meet federal requirements are referred to as State Implementation Plans. The federal and state Clean Air Acts require plans to be developed for areas designated as nonattainment (with the exception of areas designated as nonattainment for the state PM_{10} standard). The 2017 Clean Air Plan: Spare the Air, Cool the Climate was adopted on April 19, 2017, by BAAQMD.

The 2017 Clean Air Plan provides a regional strategy to protect public health and protect the climate. To protect public health, the plan describes how BAAQMD would continue progress toward attaining all state and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities. To protect the climate, the 2017 Clean Air Plan defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious greenhouse gas (GHG) reduction targets for 2030 and 2050 and provides a regional climate protection strategy that would put the Bay Area on a pathway to achieve those GHG reduction targets.

The 2017 Clean Air Plan includes a wide range of control measures designed to decrease emissions of the air pollutants that are most harmful to Bay Area residents, such as particulate matter, ozone, and toxic air contaminants; to reduce emissions of methane and other "super-GHGs" that are potent climate pollutants in the near-term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

LOCAL

Propel Vallejo General Plan 2040

Goal EET-4	Sustainable Economic Development: Pursue economic development that enhances equitable local wealth growth, improves quality of life, and respects the natural environment.

Policy EET-4.2	Responsible Development. Favor residential, commercial, and industrial development that can mitigate or avoid environmental impacts.
Action EET-4.2A	Continue to incorporate sustainable design elements such as solar panels and water-efficient landscaping into the construction of City-owned and operated facilities.
Action EET-4.2B	Consider adopting thresholds of significance for environmental review of proposed developments under the California Environmental Quality Act.
Action EET-4.2C	Assess how the City's procurement policies and employee commute modes and patterns could contribute to greenhouse gas reductions, and offer programs to mitigate potential impacts.
Goal MTC-2	Mobile Community: Enhance local transportation options and maintain a safe, convenient, and sustainable local transportation system.
Policy MTC-2.12	Resource Efficiency. Facilitate use of emerging vehicle technology to help reduce vehicle miles traveled and greenhouse gas emissions.

City of Vallejo Climate Action Plan (CAP)

The City of Vallejo's Climate Action Plan (CAP) was first published in August 2012. The CAP identifies policies that would achieve the state-recommended GHG reduction target of 15 percent below 2008 levels by 2020. The CAP provides goals and associated measures, also referred to as reduction measures, in the sectors of energy use, transportation, land use, water, solid waste, and off-road equipment.

City of Vallejo Municipal Code

Chapter 12.50, Green Building Ordinance, of the City's Municipal Code includes the CALGreen requirements. The Vallejo Municipal Code also includes Water-Efficient Landscape Requirements (Chapter 16.71).

4.6.3 STANDARDS OF SIGNIFICANCE

SIGNIFICANCE CRITERIA AND THRESHOLDS

Based upon the criteria derived from Appendix G of the *CEQA Guidelines*, a project normally would have a significant effect on the environment if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

BAAQMD Thresholds

BAAQMD's 2017 CEQA Air Quality Guidelines provide significance thresholds for project GHG emissions that are used by the City of Vallejo. If the BAAQMD thresholds are exceeded, a potentially significant impact could result. These thresholds are substantiated in the Options and Justification Report (dated October 2009) prepared by BAAQMD. These recommendations represent the best available science on the subject of what constitutes a significant GHG effect on climate change for this project. BAAQMD's recommended thresholds are as follows:

- Compliance with a Qualified Climate Action Plan or
- Meet one of the following thresholds:
- 1,100 MT CO_2e/year (yr); or
- 4.6 MTCO_2e/service population (sp)/yr (residents and employees)

These thresholds are recommended by BAAQMD based on the substantial evidence that such thresholds represent quantitative and/or qualitative levels of GHG emissions, compliance with which means that the environmental impact of the GHG emissions will normally not be cumulatively considerable under CEQA. The GHG CEQA significance thresholds recommended above are intended to serve as interim levels during the implementation of the AB 32 Scoping Plan and SB 375, which will occur over time. Until AB 32 has been fully implemented in terms of adopted regulations, incentives, and programs and until SB 375 required plans have been fully adopted, or the California Air Resources Board (ARB) adopts a recommended threshold, BAAQMD recommends that local agencies apply the recommended GHG thresholds in the Bay Area.[3]

METHODOLOGY

Global climate change is, by definition, a cumulative impact of GHG emissions. Therefore, there is no project-level analysis. The baseline against which to compare potential impacts of the project includes the natural and anthropogenic drivers of global climate change, including world-wide GHG emissions from human activities which almost doubled between 1970 and 2010 from approximately 20 gigatonnes (Gt) of CO_2/yr to nearly 40 GtCO_2/yr. As such, the geographic extent of climate change and GHG emissions' cumulative impact discussion is worldwide.

Addressing GHG impacts requires an agency to make a determination as to what constitutes a significant impact. The amendments to the CEQA Guidelines specifically allow lead agencies to determine thresholds of significance that illustrate the extent of an impact and are a basis from which to apply mitigation measures. This means that each agency is left to determine whether a project's GHG emissions will have a "significant" impact on the environment. The guidelines direct that agencies are to use "careful judgment" and "make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" the project's GHG emissions (14 CCR Section 15064.4[a]).

[3] Options and Justification Report, BAAQMD, October 2009 (pages D-11 and D-12).

A number of expert agencies throughout the state have drafted or adopted varying threshold approaches and guidelines for analyzing 2020 operational GHG emissions in CEQA documents. The different thresholds include (1) compliance with a qualified GHG reduction strategy, (2) performance-based reductions, (3) numeric "bright-line" thresholds, and (4) efficiency-based thresholds. The California Supreme Court decision in the Centers for Biological Diversity et al. vs. California Department of Fish and Wildlife, the Newhall Land and Farming Company (November 30, 2015, Case No. S217763) (hereafter "Newhall Ranch") confirmed that when an "agency chooses to rely completely on a single quantitative method to justify a no-significance finding, CEQA demands the agency research and document the quantitative parameters essential to that method."

Efficiency-based thresholds represent the rate of emission reductions needed to achieve a fair share of California's GHG emissions reduction target established under AB 32. Efficiency-based thresholds are typically calculated by dividing emissions associated with residential and commercial uses (also called the "land use sector") in the state by the sum of jobs and residents. (The 2020 Business As Usual (BAU) emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors—e.g., transportation, electrical power, commercial and residential/land use, industrial, etc.). The sum of jobs and residents is called the "service population," and a project's service population is defined as the people that work, study, live, and congregate on the project site. Therefore, for the purposes of this analysis, the proposed project is compared to an efficiency-based significance threshold.

Although noting that use of such thresholds is not required, the Court noted that BAAQMD adopted GHG significance thresholds and their validity was not under examination. The thresholds are based on compliance with AB 32 and use a service population GHG metric for land use projects. It is important to note that the Court recognized the use of efficiency (i.e., service population) metrics. The Court's support of efficiency metrics as a superior approach was based on the recognition that California's population will continue to grow, while at the same time GHG emissions will need to shrink.

U.S. Supreme Court rulings establish that the U.S. Constitution limits exactions on new development to those having a "nexus" and "rough proportionality" to the impact actually caused by the new development. While there is a nexus for requiring GHG reductions for new development that results in new GHG emissions, the reductions mandated must be proportional to the impact caused by new development. Requiring new development to meet the average statewide GHG efficiency is a proportional measure but requiring more than average levels of efficiency would be mitigating existing conditions beyond the impact associated with a proposed development. A requirement to mitigate beyond a project's impact would be in conflict with the law. Using the efficiency-based standard, it is possible to directly compare a proposed project's GHG to the State plan to determine compliance. As the adopted state plan is presumed to be adequate to meet the GHG reduction goals of AB 32, if a project is consistent with the plan, it is also consistent with the GHG reduction goals of AB 32.

The Newhall Ranch decision also identified the need to analyze both year 2020 and post-2020 emissions, as applicable, stating that an "EIR taking a goal-consistency approach to CEQA significance may in the near future need to consider the project's effects on meeting longer-term emissions reduction targets." The

recent Cleveland National Forest Foundation v. San Diego Association of Governments Supreme Court decision has affirmed this requirement. SB 32 codifies the 2030 target in Executive Order B-30-15 (40 percent below 1990 levels by 2030). The bill authorizes the state board to adopt an interim GHG emissions level target to be achieved by 2030. SB 32 states that the intent is for the legislature and appropriate agencies to adopt complementary policies that ensure that the long-term emissions reductions advance specified criteria. Furthermore, while not legally binding on local land use agencies, Executive Order S-03-05 has set forth a long-term reduction target to reduce GHG emissions by 80 percent below 1990 levels by 2050. At the time of writing this analysis, however, no specific policies or emissions reduction mechanisms have been established.

The Association of Environmental Professionals' Climate Change Committee recommended that CEQA analyses for most land use development projects can continue to rely on current thresholds for the immediate future, but that long-term projects should consider "post- 2020 emissions consistent with 'substantial progress' along a post-2020 reduction trajectory toward meeting the 2050 target."[4] The committee further recommends that the "significance determination … should be based on consistency with 'substantial progress' along a post-2020 trajectory." Accordingly, project-related impacts in both 2020 and 2030 are considered in this analysis using the efficiency-based threshold concept.

Post-2020 (Substantial Progress) Threshold Calculation

As noted above, BAAQMD developed GHG efficiency metrics for the land use sector that would accommodate projected growth (as indicated by population and employment growth) under trend forecast conditions, and the emission rates needed to accommodate growth while allowing for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020). The resultant GHG efficiency metric is 4.6 MT CO_2e/SP. BAAQMD has determined that a project with GHG emissions per service population less than 4.6 MT CO_2e/SP would be considered less than significant. Development of the proposed project would occur beyond 2020 (with an opening year of 2023). Therefore, a threshold that addresses a future target is appropriate. The BAAQMD thresholds were used to develop plan level thresholds for 2040. Although BAAQMD has not published a post-2020 quantified threshold, this EIR analysis uses a substantial progress efficiency metric based on linear interpolation. The substantial progress efficiency metric has been calculated for the 2023 (the project's opening year) and 2030 (the horizon year consistent with SB 32, which requires GHG emissions to be 40 percent below 1990 levels). It should be noted that the 2030 threshold is only provided for information purposes.

Linear Interpolation Equation

The inventory goal for the years 2023 and 2030 are selected because these represent the opening year and consistency with the goal of SB 32 (statewide GHG reductions of 40 percent below 1990 levels by 2030) as well as the necessary trajectory toward meeting the goal of Executive Order S-03-05 (statewide GHG reductions of 80 percent below 1990 levels by 2050). As BAAQMD's 4.6 MTCO_2e/SP threshold was established to meet the AB 32 2020 goal, the substantial progress 2030 goal should be 2.76 MTCO_2e/SP

[4] Association of Environmental Professionals' (AEP) Climate Change Committee, 2015. *Beyond 2020: The Challenges of Greenhouse Gas Reduction Planning by Local Governments in California* (Beyond 2020).

(i.e., 40 percent below 4.6 $MTCO_2e/SP$). The opening year (2023) threshold was calculated by interpolating between the 2020 threshold and the 2030 threshold.

$$2023\ Threshold = \frac{((2023 - 2020) * (2.76 - 4.6))}{(2030 - 2020)} + 4.6$$

Where:

2023 Threshold = Interpolated threshold between 2020 and 2030

2.76 = 40 percent below BAAQMD's 4.6 $MTCO_2e/SP$ threshold (2.76 $MTCO_2e/SP$)

4.6 = BAAQMD's 4.6 $MTCO_2e/SP$ threshold

Project Emissions Calculations

The project's construction and operational emissions were calculated using the California Emissions Estimator Model version 2016.3.2 (CalEEMod). For analytical purposes, construction is anticipated to occur for approximately three years. The modeling conservatively assumed that construction would begin in 2020 with buildout in 2023. It should be noted that analyzing construction at an earlier date is conservative, because the model incorporates cleaner emissions factors in future years to account for the implementation of more stringent emissions standards and fleet turnover. Details of the modeling assumptions and emission factors are provided in Appendix C of this EIR. For construction, CalEEMod calculates emissions from off-road equipment usage and on-road vehicle travel associated with haul, delivery, and construction worker trips. GHG emissions during construction were forecasted based on the proposed construction schedule, included in Appendix C of this EIR, and applying the mobile-source and fugitive dust emissions factors derived from CalEEMod. The project's construction-related GHG emissions would be generated from off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. The project's operations-related GHG emissions would be generated by vehicular traffic (vendor delivery trucks, and worker/consumer/resident vehicles), area sources (e.g., landscaping maintenance, consumer products), electrical generation, natural gas consumption, water supply and wastewater treatment, and solid waste.

It should be noted that CalEEMod emission factor incorporates compliance with some, but not all, applicable rules and regulations regarding energy efficiency and vehicle fuel efficiency, and other GHG reduction policies, as described in the CalEEMod User's Guide (November 2017). The reductions obtained from each regulation and the source of the reduction amount used in the analysis are described below.

The following regulations are incorporated into the CalEEMod emission factors:

- Pavley I motor vehicle emission standards
- Low Carbon Fuel Standard (LCFS)
- 2016 Title 24 Energy Efficiency Standards

The following regulations have not been incorporated into the CalEEMod emission factors and require alternative methods to account for emission reductions provided by the regulations:

- Pavley II (LEV III) Advanced Clean Cars Program (extends to model year 2025)
- Renewable Portfolio Standards (RPS)
- Green Building Code Standards (indoor water use)
- California Model Water Efficient Landscape Ordinance (Outdoor Water)
- 2019 Title 24 Energy Efficiency Standards (effective January 1, 2020)

Pavley II/LEV III standards have not been incorporated in the latest version of CalEEMod. Reductions from standards are calculated by adjusting the CalEEMod GHG passenger car and light truck emission factors by CARB's estimated three percent reduction expected from the vehicle categories subject to the regulation by 2020.

RPS is not accounted for in the current version of CalEEMod. Reductions from RPS are addressed by revising the electricity emission intensity factor in CalEEMod to account for the utility complying with the 33 percent renewable mandate by 2020. The Pacific Gas & Electric Company (PG&E) has exceeded the 33 percent renewable energy goal for 2020 (PG&E's 2018 power mix included 39 percent renewables[5]) and will be required to achieve the 60 percent renewable energy goal by 2030 established by SB 100.

Energy savings from water conservation resulting from the Green Building Code Standards for indoor water use and California Model Water Efficient Landscape Ordinance for outdoor water use are not included in CalEEMod. The Water Conservation Act of 2009 mandates a 20 percent reduction in urban water use that is implemented with these regulations. Benefits of the water conservation regulations are applied in the CalEEMod mitigation component. Adjustments were also made for project design features that would reduce GHG emissions. The proposed project would also be constructed in conformance with CALGreen, which requires high-efficiency water fixtures for indoor plumbing and water-efficient irrigation systems.

The 2019 Building Energy Efficiency Standards (adopted on May 9, 2018) take effect on January 1, 2020. Under the 2019 standards, homes would use about 53 percent less energy and nonresidential buildings would use about 30 percent less energy than buildings under the 2016 standards. Adjustments were made for project design features that would reduce GHG emissions. Furthermore, the project would develop new buildings that would achieve the latest Building Energy Efficiency Standards pursuant to Chapter 12.50 (Green Building Ordinance) of the Vallejo Municipal Code.

The mitigated output from CalEEMod show reductions from existing regulatory requirements and project design features that are termed "mitigation" within the model; however, those modeling components associated with locational measures and compliance with existing regulations are not considered mitigation under CEQA, but rather are treated as project design features. The project would incorporate

[5] Pacific Gas & Electric Company, *Clean Energy Solutions*, 2019, https://www.pge.com/en_US/about-pge/environment/what-we-are-doing/clean-energy-solutions/clean-energy-solutions.page?WT.mc_id=Vanity_cleanenergy, accessed November 15, 2019.

design features and would obtain benefits from its location that would reduce project vehicle miles traveled compared to default values. The measures incorporated into the CalEEMod modeling and mitigation component include:

- **LUT-3 Increase Diversity of Land Uses**: The measure requires at least three different land uses within 0.25 mile. There are single-family residential, multi-family residential, retail, and office land uses within this distance from the project.
- **LUT-4 Improve Destination Accessibility**: The measure is based on distance to downtown or major job centers. The project is within three miles from an existing job center (CARB designated business district) in downtown Vallejo.
- **SDT-1 Improve Pedestrian Access**: This measure provides pedestrian access linking the project to other areas to encourage walking. The measure requires both on-site and off-site pedestrian infrastructure. The proposed project incorporates sidewalks, paseos, and a trail designed to promote a pedestrian- and bicycle-friendly environment; to encourage alternative transportation between the commercial and residential project elements; and, improve access to the proposed open space.
- **LUT-5 Increase Transit Accessibility**: This measure requires the presence of a transit stop within walking distance of the project. CalEEMod calculates the reduction on distance to the stop. Mitigation Measure TR-4 (refer to Section 4.15, Transportation) requires a new SolTrans bus pull-out.

The reductions attributable to these measures in CalEEMod are derived from methodologies compiled in the CAPCOA report Quantifying GHG Measures. Each measure was assessed to determine its consistency with CAPCOA criteria for the use of the measure.

4.6.4 PROJECT IMPACTS AND MITIGATION

IMPACT GHG-1	***WOULD THE PROJECT GENERATE GREENHOUSE GAS EMISSIONS, EITHER DIRECTLY OR INDIRECTLY, THAT COULD HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT?*** ***(LESS THAN SIGNIFICANT IMPACT WITH MITIGATION)***

The project would include direct and indirect GHG emissions from project commercial and residential construction and operations. Construction is considered a direct source since these emissions occur at the site. Direct operational-related GHG emissions for the proposed project would include emissions from area and mobile sources, while indirect emissions are from energy consumption, water demand, and solid waste. These sources are discussed in detail below.

CONSTRUCTION EMISSIONS

Construction of the project would result in direct emissions of CO_2, N_2O, and CH_4 from the operation of construction equipment and the transport of materials and construction workers to and from the project site. BAAQMD does not have a threshold for construction GHG emissions. However, BAAQMD advises that construction GHG should be disclosed and a determination on the significance of construction GHG emissions in relation to meeting AB 32 GHG reduction goals should be made. Total GHG emissions generated during all phases of construction were combined and are presented in Table 4.6-2, *Construction Greenhouse Gas Emissions*. The CalEEMod outputs are contained within the Appendix C, Air Quality and GHG Data. As shown in *Table 4.6-2: Construction Greenhouse Gas Emissions*, construction activities would result in 4,004 $MTCO_2e$ over the entire construction period.

Table 4.6-2: Construction Greenhouse Gas Emissions

Year	Emissions ($MTCO_2e$)[1]
2020	319
2021	535
2022	1,672
2023	1,478
Total	**4,004**
Exceeds BAAQMD Thresholds?[2]	**N/A**

Notes:
1. Due to rounding, total $MTCO_2e$ may be marginally different from CalEEMod output. $MTCO_2e$ = metric tons of carbon dioxide equivalent
2. BAAQMD does not have a threshold for construction GHG emissions.

Source: Kimley-Horn and Associates, 2019; refer to Appendix C.

OPERATIONAL

Operational or long-term emissions occur over the life of the proposed project. GHG emissions would result from direct emissions such as project generated vehicular traffic, on-site combustion of natural gas, operation of any landscaping equipment. The calculations include energy consumption rates to represent the latest building code, 2019 Title 24. Operational GHG emissions would also result from indirect sources, such as off-site generation of electrical power over the life of the project, the energy required to convey water to, and wastewater from the project site, the emissions associated with solid waste generated from the project site, and any fugitive refrigerants from air conditioning or refrigerators. *Table 4.6-3: Operational Greenhouse Gas Emissions*, summarizes the total GHG emissions associated with proposed project. A description of the primary sources of operational emissions is provided below.

Area Sources. Area source emissions occur from hearths (i.e., natural gas fireplaces)[6], architectural coatings, landscaping equipment, and consumer products. Landscaping is anticipated to occur throughout the project area. Additionally, the primary emissions from architectural coatings are volatile organic

[6] Wood-burning fireplaces are not permitted under BAAQMD Regulation 6, Rule 3.

compounds, which are relatively insignificant as direct GHG emissions. The proposed project's unmitigated area source emissions would be 23 $MTCO_2eq/yr$ (refer to Table 4.6-3).

Energy Consumption. Energy consumption consists of emissions from project consumption of electricity and natural gas. The project's unmitigated emissions would be a maximum of 484 $MTCO_2e/yr$ from energy consumption (refer to Table 4.6-3).

Mobile Sources. Mobiles sources from the proposed project were calculated with CalEEMod based on the trip generation from the project Traffic Impact Analysis. As shown in Table 4.6-3, unmitigated project mobile source emissions would be a maximum of 8,594 $MTCO_2eq/yr$.

Solid Waste. Solid waste releases GHG emissions in the form of methane when these materials decompose. The unmitigated solid waste emissions would be 461 $MTCO_2e/yr$ from solid waste (refer to Table 4.6-3).

Water and Wastewater. GHG emissions from water demand would occur from electricity consumption associated with water conveyance and treatment. The proposed project would result in a maximum of 50 $MTCO_2e/yr$ from water and wastewater conveyance and treatment (refer to Table 4.6-3).

Vegetation Land Use Change (Loss of Sequestration). Sequestration refers to the process of vegetation storing CO_2 (resulting in a carbon sink and reducing CO_2 emissions). As the project would develop natural land with vegetation that is currently sequestering CO_2, loss of the existing vegetation would result in approximately 173 $MTCO_2e$ that would not be sequestered, which is approximately 9 $MTCO_2e/yr$ over a 20-year growing period.

Table 4.6-3: Operational Greenhouse Gas Emissions

Category	Emissions ($MTCO_2e$)[1]			
	2023 Unmitigated	**2023 Mitigated**	**2030 Unmitigated**	**2030 Mitigated**
Area	23	2	23	2
Energy	484	482	448	415
On-Road Mobile Sources[2]	8,594	4,067	7,255	3,494
Off-Road	177	177	177	177
Waste	461	115	461	115
Water/Wastewater	50	41	47	38
Sequestration Loss	9	9	9	9
Total	**9,798**	**4,893**	**8,420**	**4,250**
Emissions per Service Population Per Year ($MTCO_2e$/SP/year)[3]	**13.06**	**6.52**	**11.23**	**5.67**
BAAQMD Efficiency Metric Threshold ($MTCO_2e$/SP/year) (Adjusted for 2023 and 2030)[4]	**4.05**	**4.05**	**2.76**	**2.76**
Exceeds BAAQMD Thresholds?	**Yes**	**Yes[5]**	**Yes**	**Yes[5]**

Category	Emissions ($MTCO_2e$)[1]			
	2023 Unmitigated	2023 Mitigated	2030 Unmitigated	2030 Mitigated

Notes:
1. Emissions were calculated using CalEEMod version 2016.3.2. Emissions may not total due to rounding. Mitigated emissions also include implementation of regulations identified in the Methodology Section.
2. Proposed project mobile emissions are based on the net total project trip generation of 11,060 daily vehicle trips on weekdays, 11,539 daily vehicle trips on Saturdays, and 10,875 daily vehicle trips on Sundays per the project Transportation Impact Analysis.
3. The service population consists of residents and employees. As noted in Chapter 4.12 (Population and Housing), the project would have 60 net new Costco employees at the proposed Costco, 32 new retail commercial employees, 513 new residents, and 145 backfill employees at the existing Costco site when the building is re-occupied, for a total service population of 750.
4. Although BAAQMD has not published a post-2020 quantified threshold yet, this analysis uses their substantial progress efficiency metric of 4.05 MT CO_2e/ year/SP in 2023 and 2.76 in 2030 MT CO_2e/ year/SP.
5. Implementation of Mitigation Measure GHG-12 requires the purchase of GHG carbon credits and/or offsets to reduce any remaining emissions below the BAAQMD threshold.

Source: Kimley-Horn, 2019; refer to Appendix C.

Table 4.6-3 lists the emissions from the project unmitigated scenario, the project with mitigation and regulations in 2023, as well as the unmitigated and mitigated emissions in 2030. As the unmitigated emissions would exceed thresholds, mitigation would be required. The mitigated scenario includes project design features (e.g., diversity of land uses, improved destination accessibility, improved pedestrian access) as well as mitigation measures to be implemented by the project applicant to reduce greenhouse gas emissions. These mitigation measures are listed below. MM GHG-1 requires outdoor electrical outlets for the use of electric-powered landscape equipment, MM GHG-2 prohibits wood and natural gas burning hearths, MM GHG-3 requires a residential and non-residential Transportation Demand Management (TDM) program to reduce vehicle miles traveled and mobile source emissions. MM GHG-4 through MM GHG-6 require traffic calming measures, pedestrian connectivity features, and internal trails to encourage non-motorized transportation. Additionally, MM GHG-7 through MM GHG-9 require alternatively fueled equipment (e.g., forklifts), truck idling restrictions, and electrical hookups at loading docks. MM GHG-10 requires the proposed Costco building to be solar-ready and add solar panels within four years of project opening. MM GHG-11 includes additional energy efficiency, water efficiency, solid waste reduction, and educational measures to further reduce emissions. GHG emissions offsets to reduce the remaining emissions below thresholds are required by MM GHG-12. GHG mitigation credits and carbon offsets are required to be of sufficient criteria to meet the standards of an Approved Registry. Carbon offsets shall be real, additional, quantifiable, enforceable, validated, and permanent.

With a service population (SP) of 750[7], the project would generate approximately 6.52 $MTCO_2e$/SP/yr and 5.67 $MTCO_2e$/SP/yr for 2023 and 2030 conditions, respectively, with the implementation of mitigation measures GHG-1 through GHG-11. Additionally, mitigation measure GHG-12 would ensure that project GHG emissions are reduced below thresholds because the project applicant would be required to purchase carbon offset credits to reduce project greenhouse gas emissions below the BAAQMD thresholds. Therefore, impacts would be less than significant with the implementation of mitigation.

As noted above, development of the proposed project would occur beyond 2020 (with an opening year of 2023). Therefore, a threshold that addresses a future target is appropriate. Although BAAQMD has not

[7] The service population consists of residents and employees of the proposed project. This includes 60 net new Costco employees at the proposed Costco, 32 new retail commercial employees, 513 new residents, and 145 backfill employees at the existing Costco site when the building is re-occupied, for a total service population of 750.

published a post-2020 quantified threshold, this EIR analysis uses a "Substantial Progress" efficiency metric of 4.05 MT CO_2e/year/SP. This is calculated for 2023 based on the GHG reduction goals of SB 32, taking into account the 1990 inventory (refer to the methodology discussion in Section 4.6.3). It should be noted that 2030 emissions and thresholds are provided for informational purposes only.

Table 4.6-3 shows that most of the project's emissions (approximately 93 percent in the mitigated opening year scenario) are from energy and mobile sources. As noted above, energy and mobile sources are targeted by statewide measures such as continued implementation of the Renewable Portfolio Standard (the target is now set at 60 percent renewables by 2030) and extension of the Cap and Trade program (requires reductions from industrial sources, energy generation, and fossil fuels). The Cap and Trade program covers approximately 85 percent of California's GHG emissions as of January 2015. The statewide cap for GHG emissions from the capped sectors (i.e., electricity generation, industrial sources, petroleum refining, and cement production) commenced in 2013 and will decline approximately three percent each year, achieving GHG emission reductions throughout the program's duration. The passage of AB 398 in July 2017 extended the duration of the Cap and Trade program from 2020 to 2030.

The proposed project is required to comply with all building codes in effect at the time of construction which include energy conservation measures mandated by Title 24 of the California Building Standards Code – Energy Efficiency Standards. Title 24 standards require energy conservation features in new construction (e.g., high-efficiency lighting, high-efficiency heating, ventilating, and air conditioning (HVAC) systems, thermal insulation, double-glazed windows, water-conserving plumbing fixtures), which help reduce GHG emissions. California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. Residential buildings built to the 2016 standards use about 28 percent less energy for lighting, heating, cooling, ventilation, and water heating than residences built to the 2013 standards. Residences built to the 2019 standards will use about 53 percent less energy and nonresidential buildings would use about 30 percent less energy than buildings under the 2019 standards when compared to the 2016 standards.[8]

Additionally, MTC and ABAG's SB 375 regional plan climate targets are also expected to help California reach its GHG reduction goals with reductions in per capita transportation emissions of 7 percent by 2020 and 15 percent by 2035. The project is an infill development project that would include retail, residential, and open space areas near existing residential areas and retail services, thereby potentially reducing the need to travel long distances for some residents and reducing associated GHG emissions.

It should be noted that service population is typically defined as residents and employees, and projects with high numbers of customers or visitors are not counted as service population. Therefore, retail projects tend to exceed service population thresholds even for highly efficient projects because the additional customers are not included in the service population calculation although they generate mobile source emissions (usually the highest emissions source), though that is not the case on this project based on 4.6-3. For the evaluation of the proposed project against a service population threshold, the

[8] California Energy Commission, *2019 Building Energy Efficiency Standards Frequently Asked Questions*, March 2018.

transportation emissions associated with customers and visitors are conservatively included even though those emissions are already accounted for with their own residences or origins.

The project site is an infill project within an urban area near I-80, a mix of land uses, and large roadways. The proposed project includes 179,690 sf of retail uses including a Costco store, 178 single-family dwelling units, open space, and green areas. To reduce energy consumption and associated GHG emissions and promote sustainability, Costco would incorporate various energy-saving measures when constructing the new facility. Below are some of the significant practices that Costco currently incorporates into new buildings that help conserve energy and other natural resources:

- Parking lot light standards are designed in order to provide even light distribution, and utilize less energy compared to a greater number of fixtures at lower heights. The use of LED lamps provides a higher level of perceived brightness with less energy than other lamps such as high-pressure sodium.
- New and renewable building materials are typically extracted and manufactured within the region.
- The use of pre-manufactured building components, including structural framing and metal panels, helps to minimize waste during construction.
- Pre-manufactured metal wall panels with insulation carry a higher R-Value and greater solar reflectivity to help conserve energy. Building heat absorption is further reduced by a decrease in the thermal mass of the metal wall when compared to a typical masonry block wall.
- Costco uses a reflective cool roof material to produce lower heat absorption and thereby lowering energy requirements during the hot summer months. This roofing material meets the requirements for the U.S. EPA's Energy Star energy efficiency program.
- A substantial amount of the proposed plant material for the new site is native drought tolerant and would use less water than other common species.
- The irrigation system includes the use of deep root watering bubblers for parking lot trees to minimize usage and ensure that water goes directly to the intended planting areas.
- Storm water management plans are designed to maintain quality control and storm water discharge rates.
- Use of native species vegetation and drip irrigation systems greatly reduces potable water consumption.
- High-efficiency restroom fixtures that achieve a 40 percent decrease and water savings over U.S. standards by using high efficient restroom fixtures.
- Building envelopes are all insulated to meet or exceed current energy code requirements.
- Testing and maintenance of mechanical systems to maintain efficiency and increase reliability.
- HVAC comfort systems are controlled by a computerized building management system to maximize efficiency.

- HVAC units are high efficiency direct ducted units.
- HVAC units have phased out the use of HCFC's completely, long before the Montreal Protocol timeline.
- Parking lot and exterior lights are controlled by a photosensor and time clock.
- Lighting is controlled by the overall project energy management system.
- High-efficiency light source and ballasts (LED) and bi-level switching for fluorescent fixtures are used.
- Energy-efficient Transformers (i.e., Square D Type EE transformers) are used.
- Variable speed motors would be used on make-up air units and booster pumps.
- Gas water heaters are direct vent and 94 percent efficient or greater.
- Reclaim tanks are used to capture heat released by refrigeration equipment to heat domestic water in lieu of rejecting heat to the outside.
- Main Building structure is a pre-engineered system that uses 100 percent recycled steel materials and is designed to minimize the amount of material utilized.
- Roof material is 100 percent recycled standing seam metal panel, designed to maximum efficiency for spanning the structure.
- When masonry and concrete are used, the materials purchased are local to the project minimizing the transportation and impact to local road networks.
- Construction waste is recycled whenever possible.
- Floor sealant is No-VOC and represents over 80 percent of the floor area.
- Lighting systems are designed with employee controllability in mind. Lighting is controlled by timers but over-ride switches are provided for employee use.
- CO_2 is monitored throughout the warehouse
- Extensive recycling/reuse program is implemented for warehouse and office space including tires, cardboard, grease, plastics and electronic waste.
- Suppliers are required to reduce packaging and consider alternative packaging solutions.
- Distribution facilities are strategically located to minimize miles traveled for delivery.
- Deliveries are made in full trucks.
- All Costco trucks are equipped with an engine idle shut off timer.

As shown in Table 4.6-3, with the implementation of MM GHG-1 through GHG-11, net GHG emissions resulting from the proposed project would exceed the BAAQMD efficiency metric of 4.6 MT CO_2e/year/SP and the substantial progress efficiency metric of 4.05 MT CO_2e/year/SP for 2023. Mitigation Measure GHG-12 requires the purchase of GHG offset credits to reduce the emission levels below BAAQMD

thresholds. Therefore, project-related GHG emissions would be significant and the following mitigation measures are required.

Mitigation Measures:

MM GHG-1 **Electric Powered Landscape Equipment.** Prior to issuance of building permits, the project applicant shall prepare and submit building plans to the City of Vallejo Chief Building Official that demonstrate that all new residential and non-residential structures have outdoor electrical outlets accessible to maintenance workers and landscapers in the front, side and rear exteriors of all structures to allow the use of electric-powered equipment.

MM GHG-2 **Hearth Emissions.** Prior to the issuance of building permits, the building official shall confirm that the applicable project plans and specifications do not include wood-burning and natural gas hearths.

MM GHG-3 **Vehicle Trip Reduction.** The project applicant shall submit a qualifying Commute Trip Reduction (CTR)/Transportation Demand Management (TDM) plan prepared by a qualified transportation consultant acceptable to the City to reduce vehicle miles traveled by at least 17.8 percent. The TDM plan shall be approved by the City of Vallejo Public Works Director prior to the issuance of occupancy permits and incorporated into the project's Covenants. Conditions and Restrictions (CC&Rs). The TDM plan shall discourage single-occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking. The TDM plan shall include a requirement for annual reporting to the City Planning Division showing good faith compliance with plan requirements. The TDM plan may be modified with the City's agreement, provided that no additional trips are generated.

Examples of trip reduction measures for non-residential uses may include, but are not limited to:

- Include a pedestrian access system integrated into the design of the project to encourage pedestrian travel as an alternative to automobile travel.
- Post transit information (maps, schedules, fares, etc.) in a public area of Costco that is accessible to employees and patrons;
- Provide a work commute trip reduction program for on-site employment that may include employer carpooling promotion, employer ride-matching assistance, preferential carpool parking on-site, employer vanpool assistance, and on-site bicycle end-trip facilities including bicycle parking.
- Provide employer-subsidized transit passes;
- Sponsor an employee ride-sharing program;
- Provide employee lockers for personal items;

- Provide employees with an employee-only restroom with a shower (applies only to Costco warehouse);
- Provide secure indoor bicycle parking (racks or lockers) for employees;
- Provide customer bicycle parking (racks) in safe and convenient locations;
- Allow flex scheduling or compressed scheduling practices;
- Provide preferential parking spaces for clean air vehicles;
- Provide additional parking spaces designated for electric vehicles and electric vehicle charging stations beyond what is already required (applies only to Costco warehouse) and
- If home delivery service is provided in the future, it shall be performed using low emission or alternative-fueled (electric, natural gas, hydrogen, etc.) vehicles.

Examples of trip reduction measures for residential uses may include, but are not limited to:

- Provide a ride-matching assistance program that will include ride-matching through a website and/or social media site and/or advertisements in community common areas;
- Provide a school trip matching program via the Homeowners Association (HOA) and the local schools to match local students together for potential carpools through the HOA, PTA, and school website and/or social media site and/or promotion at the local schools;
- Establish a Transit Management Association, such as through a HOA, to promote, manage, and monitor transit and mobility services and infrastructure, such as through distributing information to homeowners on transit options or through posters in inform the public; and
- The Transit Management Association shall work with local automotive dealers to help promote CNG electric and hybrid electric vehicles, such as requesting that dealers offer incentive programs to residents of the project.

MM GHG-4 **Traffic Calming.** The project developers shall integrate traffic calming measures into the community-wide circulation network to promote reduced speeds and encourage pedestrian and bicycle trips. Prior to the issuance of building permits, the building official shall confirm with the Public Works Director that the applicable project public improvement plans and specifications include traffic calming measures such as marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, roundabouts or mini-circles, on-street parking, planter strips with street trees, chicanes/chokers, and others where applicable.

MM GHG-5 **Pedestrian Connectivity.** The project developers shall provide as part of the project and consistent with City requirements and limitations, sidewalks and crosswalks at all streets (along with general pedestrian connectivity throughout the project) to encourage pedestrian travel and offer an alternative to vehicle trips.

MM GHG-6 **Internal Trails.** The project developers shall construct a multi-purpose internal trail system that includes an off-road multi-use trail and bike lanes within the street right-of-way.

MM GHG-7 **Alternatively Fueled Equipment.** To the extent that such equipment is readily available and can adequately perform all tasks, Costco shall use electric-, propane-, or natural gas-powered mobile equipment (forklifts, non-street legal street sweepers, etc.) for operational activities within the project site. Existing gasoline- or diesel-powered mobile equipment may continue to be used until its service life is exhausted.

MM GHG-8 **Idling Limitation.** Prior to issuance of occupancy permits for the Costco store, the project applicant shall submit to the satisfaction of the Planning & Development Director, an idling restriction program for heavy-duty diesel vehicles. The program shall require that all trucks comply with state regulations limiting idling to no more than 5 minutes. The program shall be implemented through signage in all loading areas and training of store personnel about the idling restrictions.

MM GHG-9 **Loading Dock Electrical Hookups.** Prior to issuance of building permits for the proposed Costco store, the project applicant shall provide at least of one electrical hookup in each of the proposed loading docks that is capable of powering a truck-mounted transport refrigeration unit (TRU) with an electrical hookup option.

MM GHG-10 **On-Site Renewable Energy.** Prior to issuance of building permits for the proposed Costco store, the project applicant shall submit to the satisfaction of the Chief Building Official, a roof layout plan that illustrates how future installation of a photovoltaic system could be accommodated, including plans that identify installation of conduit from the roof to the electrical room—or to electrical panels if no electrical room is provided—to accommodate future photovoltaic system or other collector/power generation installation. Within four years of project occupancy, Costco shall install rooftop photovoltaic panels or another renewable energy source that generates at least 500,000-kilowatt hours (kWh) per year.

MM GHG-11: **Additional GHG Emissions Reduction Measures.** The proposed project shall include, but not be limited to, the following list of Project Design Features, which shall be incorporated into the project to ensure compliance with BAAQMD GHG thresholds. The project applicant may submit a report to the City, prepared by a qualified independent consultant, that substantiates why specific measures are considered infeasible at that point in time and identify alternate measures that would achieve equivalent reductions. The recommended measures for reducing operational GHG emissions are listed below. The recommended measures may be updated as new technologies or methods become

available, to the satisfaction of the Planning & Development Services Director. The project applicant shall be required to implement the following:

Energy Efficiency Measures

- Include conduits and space for the future addition of energy storage to optimize renewable energy generation systems and avoid peak energy use. Electrical panels should appropriately sized to allow for future expanded use. This measure shall be verified prior to building permit issuance.
- The City shall verify before issuance of all residential building permits that where appliances are offered by residential project developers, Energy Star-rated appliances (or other equivalent technology) for clothes washers, dishwashers, refrigerators, and fans shall be installed in the residences.
- The City shall verify before issuance of all residential and non-residential building permits that high-efficiency light bulbs and lighting fixtures are installed in residential and non-residential buildings. High-efficiency light bulbs include compact fluorescent lamps (CFLs), light-emitting diodes (LED), and other light bulbs that provide an energy efficiency of at least 75% compared to traditional incandescent bulbs.
- The City shall verify before issuance of building permits that buildings comply with Title 24 Building Energy Efficiency Standards, which includes energy-efficient design practices such as high-performance glazing. Energy Star compliant systems, radiant heat roof barriers (including but not limited to high-albedo white thermoplastic polyolefin roof membrane), high-efficient HVAC with hot-gas reheat, insulation on all pipes, programmable thermostats, solar access, shading of HVAC systems from direct sunlight, use of formaldehyde-free insulation, use of recycled-content gypsum board, sealed ducts, orientation of building and incorporation of landscaping to maximize passive solar (heating during cool seasons, and minimize heat gain during hot season), and designs that take advantage of prevailing winds .
- The project developers shall site and design buildings to take advantage of daylight where feasible and consistent with building purpose.
- The project developers shall use lighter-colored paving or open-grid paving materials for surface parking areas or break up large expanses of paved area with shade trees or shade structures or use light-colored roofing materials.

Water Efficiency Measures

- To the extent feasible, project developers shall landscape to preserve natural vegetation and maintain watershed integrity. This measure shall be verified prior to building permit issuance.

- The project shall use native species and drought-tolerant species for a minimum of 50 percent of the ornamental plant palette in non-turf areas for all retail, common, and public areas, and residential front-yard landscaping to minimize water demand.
- Use recycled water for landscape irrigation where available. This measure shall be verified prior to building permit issuance.

Solid Waste Measures

- Reuse, recycle, and divert construction waste, and use locally-sourced building materials with a high recycled material content to the greatest extent feasible (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard). This measure shall be verified prior to grading permit issuance.
- Provide interior and exterior storage areas for recyclables and adequate recycling containers located in public areas. Recycling bins in the storage areas shall be included to promote recycling of paper, metal, glass, and other recyclable material. These bins shall be emptied and recycled accordingly as part of the proposed project's regular solid waste disposal program. The project applicant or its successor in interest shall only contract for waste disposal services within a company that recycles waste in compliance with AB 341. This measure shall be implemented prior to issuance of occupancy permit.

GHG Reduction Education and Information

- The project applicant or its successors or the HOA shall maintain a Fairview website that includes, but is not limited to, information about greenhouse gas (GHG) reduction opportunities to help educate project residents, as well as schools, other agencies, and businesses with facilities on the project site.
- The project applicant or its successors or the HOA shall include on the Fairview website information about rebates and low-interest loans to residents that make energy-saving improvements to their homes.
- The project applicant or its successors or the HOA shall include on the Fairview website information about the air quality and greenhouse gas benefits of electric landscape maintenance equipment.
- The project applicant or its successors or the HOA shall include on the Fairview website educational information on energy and water conservation and efficiency for project residents, customers, tenants, and large energy users.
- The project applicant or its successors or the HOA shall include in the Fairview website information about energy conservation and financial incentive programs.

MM GHG-12: **GHG Emissions Offsets.** The project applicant shall purchase and retire GHG offsets to reduce the project's GHG emissions for the first 30 years below the BAAQMD's thresholds of significance (i.e., below 1,100 MTCO2e per year, or 4.6 MTCO2e per service population per year [as adjusted for post-2020 GHG reduction targets], or the latest applicable

threshold at the time). GHG offsets shall be purchased either with a lump sum payment prior to occupancy for the entire 30-year period, or on an annual basis for a period of thirty years from project occupancy. If annual payments are made, evidence of the purchase of GHG offsets for the first year of occupancy shall be submitted to the satisfaction of the Planning & Development Services Director prior to the issuance of occupancy permits. Evidence of the GHG offsets years 2-30 shall be submitted annually on or before the anniversary of the occupancy permit (or as adjusted by the Planning & Development Services Director). GHG offsets shall be purchased on an annual basis for a period of thirty years. GHG offsets shall be consistent with the performance standards and requirements set forth below.

- The GHG offsets shall be secured from an accredited registry that is recognized by the California Air Resources Board (CARB) or a California air district, or from an emissions reduction credits program that is administered by CARB or a California air district.
- The GHG offsets shall represent the past reduction or sequestration that is "not otherwise required," in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15126.4(c)(3).
- The GHG offsets shall be real, permanent, quantifiable, verifiable, and enforceable.
- Recognizing that future regulatory mandates, technological advances, new renewable energy programs, or final project design features would likely result in GHG emissions that are lower than the levels presented in this EIR, the project applicant may prepare a final project GHG emissions inventory prior to issuance of the certificate of occupancy. The inventory shall be subject to verification by a City-approved third party (at applicant expense), with the final emissions estimates dictating the increment to be mitigated through purchase of GHG offsets. The offsets must also be secured by the applicant and verified by the City prior to issuance of the certificate of occupancy, thus providing full mitigation prior to completion of the project.

IMPACT GHG-2	***WOULD THE PROJECT RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF ANY CRITERIA POLLUTANT FOR WHICH THE PROJECT REGION IS NON-ATTAINMENT UNDER AN APPLICABLE FEDERAL OR STATE AMBIENT AIR QUALITY STANDARD?***
	(LESS THAN SIGNIFICANT IMPACT WITH MITIGATION)

CITY OF VALLEJO CLIMATE ACTION PLAN (CAP)

To address this threshold associated with project buildout, project consistency with the City of Vallejo CAP is used. The CAP is a qualified Greenhouse Gas Reduction Strategy under CEQA, which can be used to determine the significance of GHG emissions from a project (CEQA Guidelines §15183.5). BAAQMD also recognizes the use of a CAP as a significance threshold for a project's GHG emissions. Therefore, if the

project is consistent with the CAP, then the project would result in a less than significant cumulative impact to global climate change in 2023.

The City of Vallejo CAP (adopted March 2012) identifies sources of GHG emissions within the City's boundaries; presents current and future emissions estimates; identifies a GHG reduction target for future years; and, presents strategic goals, measures, and actions to reduce emissions. The CAP provides goals and associated reduction measures in the sectors of energy use, renewable energy, transportation demand management, optimized travel, water, wastewater, solid waste, and off-road equipment. The CAP has a reduction target of 15 percent below 2008 levels by the year 2020 and 55 percent reduction below 2008 levels by 2035.

The proposed project would be consistent with the overall goals of the Vallejo CAP. As an infill project on a currently vacant site near major roadways, I-80, and commercial centers, the proposed project would support efforts to reduce GHG emissions from VMT. The project proposes a mix of uses including a Costco, smaller retail and neighborhood-serving uses, and single-family housing. The project would achieve the current Building Energy Efficiency Standards and would be constructed in conformance with CALGreen, which requires high-efficiency water fixtures for indoor plumbing and water-efficient irrigation systems that would improve energy efficiency. The proposed buildings would comply with Title 24 solar requirements and would meet solar-ready requirements associated with Title 24. While the requirements under Title 24 do not require installation of solar energy systems, all residences and buildings that meet solar-ready requirements would be constructed to accept the installation of such a system. Additionally, the project would be required to follow Green Building Ordinance (Chapter 12.50) of the Vallejo Municipal Code. The proposed project would also comply with SB X7-7, which requires California to achieve a 20 percent reduction in urban per capita water use by 2020, as well as implement best management practices for water conservation to achieve the City's water conservation goals. Furthermore, the proposed project would comply with the City's Construction and Demolition Debris Recycling Ordinance (Chapter 7.53), which requires applicable construction projects to divert 50 percent of construction waste. A copy of the Climate Action Plan Checklist prepared for the project is included in Appendix C of this EIR.

Table 4.6-4: City of Vallejo Climate Action Plan Consistency Analysis, shows the consistency between the proposed project and the goals and actions of the CAP. As addressed in the table, the project would be consistent with the applicable CAP reduction measures. Therefore, the project would help implement the CAP and would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. Impacts would be less than significant.

Table 4.6-4: City of Vallejo Climate Action Plan Consistency Analysis

Goal	Actions	Project Consistency
Energy (E)		
E-1. Building Stock: Existing – Facilitate energy efficiency upgrades and retrofits in existing commercial,	**E-1.1.** Connect businesses and residents with voluntary programs that provide free or low-cost energy efficiency audits and retrofit installations.	**Consistent**. The City is the responsible party for these measures. The project would not conflict with
	E-1.2. Develop an outreach program to encourage participation in low-income weatherization programs.	

Table 4.6-4: City of Vallejo Climate Action Plan Consistency Analysis

Goal	Actions	Project Consistency
residential, and industrial buildings by connecting residents and businesses with technical and financial assistance	**E-1.3.** Work collaboratively with Solano County, other municipalities in the region, and the Association of Bay Area Governments (ABAG) and participate in regional energy efficiency financing programs such as low-interest revolving loan funds, the California Comprehensive Residential Building Retrofit Program, or a Property Assessed Clean Energy (PACE) program that enables Vallejo property owners to obtain low-interest financing for energy improvements.	implementation of these measures.
	E-1.4. Consider creating a Residential Energy Conservation Ordinance (RECO) and Commercial Energy Conservation Ordinance (CECO) to require point-of-sale energy audits and retrofits for all buildings that do not meet minimum energy efficiency requirements.	
E-2. Building Standards – Require all new development to meet the minimum California Title 24 and California Green Building Standards Code requirements, as amended, and encourage new development to exceed the minimum requirements	**E-2.1.** Adopt the California Title 24 minimum requirements and encourage new construction and major remodels to adhere to a Tier 1 or Tier 2 standard of the CALGreen Code.	**Consistent**. The City is the responsible party for these measures. The project would be required to comply with these standards. Additionally, MM GHG-10 requires on-site renewable energy and MM GHG-11 requires the implementation of additional energy and water efficiency measures. Therefore, the project would not conflict with implementation of these measures.
	E-2.2. Require newly constructed buildings and recommend that remodels over 50% and tenant improvements demonstrate compliance with the mandatory CALGreen Code requirements by completing a green building checklist when submitting a request for building permits.	
	E-2.3. Consider requiring new development to comply with the Tier 1 requirements of CALGreen, part 11 of the California Building Standards Code. This optional measure may be necessary to address any shortfall in attaining reduction objectives.	
E-3. Smart Meters - Increase the community's awareness and utilization of real-time energy consumption data available through PG&E's SmartMeter program	**E-3.1.** Support PG&E's installation of SmartMeters on commercial and residential properties by informing the community of the GHG and energy cost-saving potential of the devices.	**Consistent**. The City is the responsible party for these measures. The project would be required to comply with these standards. Therefore, the proposed project would not conflict with implementation of these measures.
	E-3.2. Require newly constructed buildings and recommend that major remodels, over 50% install indoor real-time energy monitors.	
	E-3.3. Inform the community of metering options, such as online applications and in-home monitors.	
	E-3.4. Connect businesses and residents with rebate programs that give priority to appliances with smart grid technology.	
E-3. Cool Roofs and Pavements - Increase tree planting and the use of cool roofs and cool pavement materials to reduce the urban heat island effect and corresponding energy consumption. Implement tree replacement policy for	**E-4.1.** Actively inspect and enforce state requirements for cool roofs on residential and nonresidential roofing projects. Require new buildings to meet Title 24 and recommend that new buildings meet CALGreen Tier 1 requirements for cool roofs, which require a minimum solar reflectance index (SRI) of 10 for steep slope roofs and 64 for low slope roofs.	**Consistent**. The City is the responsible party for these measures. The project would be required to comply with these standards. The proposed Costco would include reflective cool roof material to meet the U.S. EPA's Energy Star energy
	E-4.2. Establish standards for new development and major remodels (to be defined) to reduce exterior heat gain for 50% of non-roof impervious site surfaces (roads, sidewalks, courtyards, parking lots, driveways) through one or more of the following mechanisms:	

Table 4.6-4: City of Vallejo Climate Action Plan Consistency Analysis

Goal	Actions	Project Consistency
projects where tree removal is necessary	• Achieve 50% paved surface shading within five to ten years by planting trees and other vegetation and/or installing solar panels or shading structures above parking. • Use paving materials with an SRI of at least 29 for all surfaces.	efficiency program requirements. The project would be planted with a pallet with a minimum of 200 trees within the parking lots of the commercial areas and within the residential area, bio-retention areas, and site perimeter. Trees within the commercial parking area are anticipated to achieve approximately 30% shading upon 5-10 years of maturity. Residential walkways would be lined with fruit trees. The project also includes 5.7 acres of permanent open space.
	E-4.3. Maintain and expand Vallejo's urban forest, including street trees and trees on private property.	
	E-4.4. For public improvements and public projects, require the use of high albedo paving material for sidewalks, roads, crosswalks, parking lots, and driveways.	
Renewable Energy (RE)		
RE-1. Renewable Energy Installations - Support the installation of small-scale renewable energy systems including solar photovoltaic, solar thermal, and wind, river current, and tidal energy conversion systems	**RE-1.1.** Update the Zoning Code to define a renewable energy strategy that removes barriers to small-scale solar energy systems.	**Consistent**. The City is the responsible party for these measures. The project would be evaluated to determine if these standards were applicable. MM GHG-10 requires on-site renewable energy (photovoltaic solar on the Costco roof). Additionally, residences would be required to include solar and/or energy efficiency measures per 2019 Title 24 requirements.
	RE-1.2. Revise the permit processes and fees as appropriate to remove barriers to and incentivize the installation of renewable energy systems in accordance with applicable safety and environmental standards.	
	RE-1.3. Provide training to at least one designated Planning and one Building staff member to enable knowledgeable and expeditious processing of renewable energy applications.	
	RE-1.4. Encourage new homes and businesses to be pre-wired and pre-plumbed for solar and solar thermal installations.	
	RE-1.5. Evaluate site-specific opportunities and constraints related to Vallejo's proximity to the San Francisco Bay and to rivers, channels, and lakes, both manmade and natural.	
RE-2. Renewable Energy Financing - Connect residents and businesses with renewable energy incentives and low-interest financing mechanisms	**RE-2.1.** Participate in a regional financing program such as the Property Assessed Clean Energy (PACE) program or equivalent that achieves similar results to provide low-interest financing for renewable energy installations.	**Not Applicable**. The City is the responsible party for these measures. The project would be required to comply with the applicable standards and would not conflict with implementation of these measures.
	RE-2.2. Designate a City staff person to coordinate local inquiries regarding the regional financing program.	
	RE-2.3. Train Planning and Building staff members on available state, regional, and utility-led financing mechanisms and incentives/rebates.	
	RE-2.4. Collaborate with neighboring jurisdictions and Solano County to explore the feasibility and cost of a community choice aggregation program.	
	RE-2.5. Set a renewable power generation goal for the City to increase communitywide energy generation.	

Table 4.6-4: City of Vallejo Climate Action Plan Consistency Analysis

Goal	Actions	Project Consistency
	RE-2.6. Work with Solano County to identify the benefits and costs of a community choice aggregation program and establish a stakeholder advisory group.	
Transportation Demand Management (TDM)		
TDM-1. Local Business – Promote buy local and related initiatives that support local commerce and reduce the need for extensive transport	**TDM-1.1.** Support efforts that encourage people who live, work, or have businesses in Vallejo to buy local goods, food supplies, and services.	**Not Applicable**. The City is the responsible party for this measure.
	TDM-1.2. Implement the elements of the Downtown Specific Plan that encourage the promotion of economic revitalization of the Downtown Commercial Area to create local options for commerce.	**Not Applicable**. The City is the responsible party for this measure. The project site is not in the Downtown Specific Plan area.
	TDM-1.3. Enact new or participate in existing award programs that recognize local employers who provide outstanding contributions to the quality of life in the community, including "green businesses."	**Not Applicable**. The City is the responsible party for these measures.
	TDM-1.4. Promote cooperative benefits organizations to enable individual merchants to achieve benefits of scale and innovation to reduce energy consumption, establish recycling programs, and reduce water use.	
	TDM-1.5. Support strategies to increase local business-to-business commerce.	
TDM-2. Mixed-Use, Higher-Density, Transit-Oriented Development –Promote mixed-use, higher-density development near transit nodes	**TDM-2.1.** Maintain the Downtown Commercial Area as a strong focal point to attract higher-density housing, business, and office use.	**Not Applicable**. The City is the responsible party for this measure. The project site is not in the Downtown Specific Plan area.
	TDM 2.2. Provide a high-quality and relatively high-density Downtown multi-family residential environment connected by selected transit-oriented priority areas and other transit corridors.	**Consistent**. The project site is not in the Downtown Specific Plan area. However, the proposed project includes a mix of uses near major roadways, freeways, and transit stops.
	TDM-2.3. Adopt incentives such as priority processing and revised codes to increase densities in the Downtown or within one-half mile of a regularly scheduled transit stop.	**Not Applicable**. The City is the responsible party for this measure. The project site is not in the Downtown Specific Plan area but would provide increased densities within a half-mile of a transit stop.
	TDM-2.4. Implement elements in the Downtown Specific Plan that encourage pedestrian-oriented plazas, walkways, bike trails, bike lanes, and street furniture and connections to other community areas. Promote pedestrian convenience and recreational opportunities through development conditions requiring sidewalks, walking paths, or hiking trails connecting various land uses with safety amenities such as lighting and signage.	**Not Applicable**. The City is the responsible party for this measure. The project site is not in the Downtown Specific Plan area but would include 11.2 acres of open space and green space.

Table 4.6-4: City of Vallejo Climate Action Plan Consistency Analysis

Goal	Actions	Project Consistency
	TDM-2.5. Implement elements in the Downtown Specific Plan that promote mixed-use development support services such as daycare, restaurants, banks, and stores near employment centers, where feasible.	**Not Applicable**. The City is the responsible party for this measure. The project site is not in the Downtown Specific Plan area.
	TDM-2.6. Support "complete streets" by incorporating applicable public transit, bicycle and pedestrian rights-of-way, and facilities for Vallejo residents when evaluating future expansion and new development of streets and highways.	**Consistent**. The project would promote the use bicycle and pedestrian facilities. The project includes mitigation that would require the applicant to provide a new Soltrans bus stop with pull-out on Turner parkway for use by residents and visitors to the site. The project also provides a new sidewalk and bicycle lanes along Admiral Callaghan Lane, and a new bicycle and pedestrian pathway along Turner Parkway.
TDM-3. Bicycle and Pedestrian Travel - Expand and link the network of pedestrian and bicycle paths and facilities through preparation of a Bicycle and Pedestrian Master Plan, with the goal of increasing the bicycle and pedestrian mode share 20% by 2035	**TDM-3.1.** Create a City-wide Bicycle and Pedestrian Master Plan to analyze existing and future pedestrian and bicycle infrastructure and facilities and to qualify for state and federal funding for bicycle- and pedestrian-related infrastructure.	**Consistent**. The City is the responsible party for these measures. The project would not conflict with the City's ability to enact these policies. However, the project includes a pedestrian-friendly residential neighborhood with cohesive design that includes active and passive recreational opportunities and bike/ pedestrian circulation amenities for future residents and users of the commercial space. The project would add bike lanes on both sides of Admiral Callaghan Lane. MM GHG-3 also requires a TDM plan that would include requirements for bicycle support facilities.
	TDM-3.2. Pursue public and private funding to expand and link the network of pedestrian and bicycle paths and facilities beginning in selected, transit-oriented priority areas.	
	TDM-3.3. Revise zoning standards to require the provision of bicycle support facilities (lockers, shower rooms, etc.) for appropriate development at a rate of 1 changing room and shower per 200 occupants.	
TDM-4. Parking - Revise parking requirements for new commercial and multi-family projects and implement the Downtown Parking Meter Installation Plan	**TDM-4.1.** Revise parking requirements for new commercial and multi-family residential projects to provide bike racks for 5% of the building's projected visitors within 200 feet of the building's entrance for commercial project and one long-term bicycle storage space per two multi-family units.	**Not Applicable**. The City is the responsible party for these measures. The project would not conflict with the City's ability to enact these policies. However, MM GHG-3 requires a TDM plan that requires bicycle parking and other amenities. The TDM plan
	TDM-4.2. Allow up to a 15% reduction in required private vehicle parking spaces in new commercial and multi-family residential projects if justified in an approved trip reduction plan.	
	TDM-4.3. Encourage shared parking programs in mixed-use and transit-oriented development areas.	

Table 4.6-4: City of Vallejo Climate Action Plan Consistency Analysis

Goal	Actions	Project Consistency
	TDM-4.4. Design parking lots, where feasible, to include clearly marked and shaded pedestrian pathways between transit facilities and building entrances.	would also include pedestrian pathways.
TDM-5. Transit - Support a convenient, attractive, and comprehensive transit system	**TDM-5.1.** Prioritize and pursue transit improvements that serve local businesses and job sites.	**Consistent**. The City is the responsible party for these measures. The project would not conflict with the City's ability to enact these policies. The TDM program required by MM GHG-3 would include subsidized transit passes.
	TDM-5.2. Encourage major employers to provide free or discounted transit passes or other incentives to employees for using transit.	
	TDM-5.3. On Mare Island, create a network of bicycle and pedestrian paths that connect with transit services, combined with a street framework that is transit-friendly but sensitive to Mare Island's historic character.	**Not Applicable**. The City is the responsible party for this measure. The proposed project is not located on Mare Island.
TDM-6. Food Systems – Support convenient access to neighborhood-serving grocery stores and community gardens	**TDM-6.1.** Encourage the distribution of grocery stores that provide fresh and local foods with convenient access from all residential neighborhoods.	**Consistent**. The proposed project includes a grocery store with fresh produce (Costco). In addition, the Costco and smaller retail area are located close to existing residential area and designed to be walkable from the proposed new residential component.
	TDM-6.2. Improve the distribution, frequency, and attendance of farmers markets in Vallejo.	**Not Applicable**. The City is the responsible party for these measures. The project would not conflict with implementation. However, the project design includes elements that are consistent with these measures. For example, the project includes residential walkways that would be lined with fruit trees and community herb gardens.
	TDM-6.3. Collaborate with community-based organizations in support of community gardens on applicable sites throughout the city.	
	TDM-6.4. Revise zoning standards as necessary to allow small neighborhood markets in appropriate areas.	
	TDM-6.5. Add an additional week-day Farmer's Market in Vallejo.	
TDM-7. Commute Behavior – Reduce emissions from commute travel to and from schools and workplaces	**TDM-7.1.** Encourage a variety of transportation system demand management techniques for new development, including variable work hours and telecommuting.	**Not Applicable**. The City is the responsible party for these measures. The project would not conflict with implementation. The project does include mitigation that requires the preparation of a Commute Trip Reduction/ Transportation Demand Management plan that requires the project applicant to demonstrate measures that
	TDM-7.2. Support the establishment and participation in Safe Routes to Schools and similar infrastructure and educational programs that enable safe passage of children and reduce vehicle trips to local schools.	
	TDM-7.3. Collaborate with the Solano Transportation Authority (STA) and Solano County to update the rideshare matching system to include the use of social networking and smartphone platforms and encourage greater use of existing park-and-ride lots.	

Table 4.6-4: City of Vallejo Climate Action Plan Consistency Analysis

Goal	Actions	Project Consistency
	TDM-7.4. Collaborate with STA and local employers to support guaranteed ride home programs including preferential parking spaces, employer-assisted ride-matching databases, recognition programs, and other incentives.	can be implemented to reduce vehicle trips to the project site.
	TDM-7.5. Participate in and contribute to regional programs to address Bay Area commute alternatives and commute efficiency.	
TDM-8. Jobs/Housing Balance - Plan for an improved jobs/housing balance in order to reduce the need for long-distance travel from residences to places of work	**TDM-8.1.** Update the City General Plan and corresponding regulations to support additional jobs and economic revitalization that improves Vallejo's jobs/housing balance.	**Not Applicable**. The City is the responsible party for this measure. The project would not conflict with implementation. The proposed project includes 178 single-family homes and is expected to generate approximately 341 jobs.
	TDM-8.2. Support the retention and expansion of local anchor and growth industries including Kaiser and Sutter hospitals, as well as Touro University on Mare Island and the California Maritime Academy.	**Not Applicable**. The City is the responsible party for these measures. The project would not conflict with implementation.
	TDM-8.3. Review land-use plans and regulations and revise as needed to support additional live/work opportunities and home occupations, provided they are compatible with the existing neighborhood.	
Optimized Travel (OT)		
OT-1. Efficient and Alternative Fuel Vehicles – Support the expanded use of efficient and alternative fuel vehicles	**OT-1.1.** Support use of high-occupancy vehicle (HOV) lanes by fuel-efficient and alternative fuel vehicles designated as zero or partial zero-emission vehicles by CARB through adoption of Climate Action Plan policies and participation on the Metropolitan Transportation Commission and other regional agency committees.	**Not in Conflict**. The City is the responsible party for these measures. The project would not conflict with implementation. However, the TDM plan (required by MM GHG-3) would require carpool incentives and would also require electric vehicle parking and charging stations to exceed code requirements.
	OT-1.2. Revise parking requirements for public and newly constructed commercial developments to include designated stalls for low-emitting, fuel-efficient vehicles and carpool/vanpool vehicles for a minimum of 8% of total parking capacity and develop pre-wire stalls for future electric vehicle charging for 2% of total parking capacity.	
	OT-1.3. Encourage new gas stations and automotive uses to include biodiesel facilities and/or offer biodiesel retrofits to diesel vehicles.	**Not in Conflict**. The City is the responsible party for this measure. Although the project includes a gas station, biodiesel and alternative fuels are not currently proposed. However, the project would not conflict with the City's ability to implement these measures.
	OT-1.4. Consider creating refueling stations to provide biodiesel fuel, compressed natural gas, or liquefied natural gas.	
OT-2. Car Sharing - Facilitate a car-sharing network in	**OT-2.1.** Facilitate and encourage at least one car-sharing company, such as Zip Car and City Car Share, to include Vallejo in its service area by 2020.	**Not Applicable**. The City is the responsible party for this measure. The project would

Table 4.6-4: City of Vallejo Climate Action Plan Consistency Analysis

Goal	Actions	Project Consistency
Vallejo.		not conflict with implementation.
	OT-2.2. Investigate the possibility of reducing the City's vehicle fleet by using car-sharing vehicles for appropriate City uses by 2020.	**Not Applicable**. The City is the responsible party for this measure. The project would not conflict with implementation.
OT-3. Anti-Idling and Traffic Calming - Support anti-idling and traffic calming infrastructure and enforcement	**OT-3.1.** Synchronize, improve, and construct traffic signal/road improvements that reduce vehicle idling	**Consistent.** The proposed project would improve various intersections through signal and roadway improvements.
	OT-3.2. Work with the Vallejo Police Department to increase enforcement of state idling restrictions for heavy-duty vehicles.	**Not Applicable**. The City is the responsible party for these measures. The project would not conflict with implementation.
	OT-3.3. Encourage local schools to implement an anti-idling campaign at pick-up and drop-off areas.	
OT-4. Zero Emission Vehicle Stations – Provide electric vehicle charging stations	**OT-4.1.** Install additional electric vehicle charging stations at City Hall and other appropriate municipal parking lots for public use.	**Not Applicable**. The City is the responsible party for these measures. The project would not conflict with implementation. The project would install electric charging stations per the building code.
	OT-4.2. Coordinate with regional agencies to install charging stations in high traffic areas through grant-funded programs encouraging electric vehicle use.	
	OT-4.3. Use small- and large-scale solar panels to power or supplemental charging stations.	
Water, Wastewater, and Solid Waste (W)		
W-1. Water Conservation Efforts – Promote and require water conservation through outreach and pricing	**W-1.1.** Continue to provide water customers with information on conservation techniques, services, devices, and rebates by posting information at vallejowater.org or through other outreach methods.	**Not Applicable**. The City is the responsible party for this measure. The project would not conflict with implementation. The proposed project would include high-efficiency water-saving techniques.
	W-1.2. Continue to enforce the City's Wasteful Water Use Prohibition Ordinance.	
W-2. Development Standards for Water Conservation - Require water conservation in all new buildings and landscapes	**W-2.1.** Per the minimum requirements of the 2010 CALGreen Code, ensure that all new non-residential buildings larger than 50,000 square feet install individual water meters for each tenant space projected to consume more than 100 gallons per day.	**Consistent**. The project would comply with the requirements of the latest State Codes.
	W-2.2. Per the minimum requirements of the 2010 CALGreen Code, ensure that new non-residential facilities with 1,000 to 5,000 square feet of irrigated landscaped space provide an additional water meter or submeter for landscaping uses.	
	W-2.3. Revise development standards to support the use of greywater, recycled water, and rainwater catchment systems in all zones.	**Not Applicable**. The City is the responsible party for this measure. The project would not conflict with implementation. MM GHG-11 requires the project to use recycled water for landscape irrigation where available.

Table 4.6-4: City of Vallejo Climate Action Plan Consistency Analysis

Goal	Actions	Project Consistency
	W-2.4. Per the voluntary requirements of the 2010 CALGreen Code, encourage newly constructed development to treat at least 40% of the average annual rainfall on-site through low impact development strategies.	**Consistent**. The project would comply with the requirements of the latest State Codes.
	W-2.5. Per the minimum requirements of the 2010 CALGreen Code, require a minimum of 20% of the total parking, walkway, and porch area surfaces serving single-family and multi-family residential buildings under 4 units to be permeable to facilitate on-site retention of water and reduce water runoff.	
W-3. Recycling and Composting Efforts - Support waste diversion through composting and recycling programs	**W-3.1.** Collaborate with CalRecycle and VALCORE Community Recycling to continue to host recycling and composting workshops and to disseminate information.	**Not Applicable**. The City is the responsible party for these measures. The project would not conflict with implementation.
	W-3.2. Provide links to information on composting and VALCORE composting services and classes on the City's website and at other appropriate venues.	
	W-3.3. Prepare a list of GHG-reducing best practices for material management to be considered during the solid waste franchise selection process and applicable City permit processes for major development projects.	
W-4. Development Standards for Recycling and Composting - Require waste diversion and use of recycled materials in new development	**W-4.1.** Continue to update the City's Construction/ Demolition Waste Reuse and Recycling Ordinance as higher diversion rates become feasible, necessary, or required.	**Not Applicable**. The City is the responsible party for these measures. However, the project would comply with the City's Construction and Demolition Debris Recycling Ordinance (Chapter 7.53) which requires applicable construction projects to divert 50 percent of construction waste.
	W-4.2. Support the development of additional markets for recycled content products by requiring new developments to include recycled content materials at a minimum of 10% of total materials.	
Off-Road Equipment (OR)		
OR-1. Lawn & Garden Equipment - Encourage the use of electrified and higher efficiency lawn and garden equipment	**OR-1.1.** Support BAAQMD's efforts to re-establish a voluntary exchange program for residential lawn mowers and backpack-style leaf blowers.	**Not Applicable**. The City is the responsible party for these measures. The project would not conflict with implementation. The proposed project has been designed to be consistent with the State of California's Model Water Efficient Landscape Ordinance. Additionally, the project includes a mitigation measure requiring the project applicant to install exterior electrical outlets on all new buildings for the use of electric-powered landscaping equipment.
	OR-1.2. Require new buildings to provide electrical outlets on the exterior in an accessible location to charge electric powered lawn and garden equipment.	
	OR-1.3. Encourage the replacement of high maintenance landscapes (like grass turf) with native vegetation to reduce the need for gas-powered lawn and garden equipment.	
OR-2. Construction Equipment -Reduce emissions from heavy-	**OR-2.1.** Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics	**Consistent**. The project would comply with the requirements

Table 4.6-4: City of Vallejo Climate Action Plan Consistency Analysis

Goal	Actions	Project Consistency
duty construction equipment by limiting idling and utilizing cleaner fuels, equipment, and vehicles	Control Measure Title 13, Section 2485 of California Code of Regulations [CCR]), or less. Clear signage shall be provided at all access points to remind construction workers of idling restrictions.	of the Air Toxics Control Measure.
	OR-2.2. Construction equipment shall be maintained per manufacturer's specifications.	**Consistent**. This is also a BAAQMD basic construction measure required for all projects and would be required per Mitigation Measure AQ-1.
	OR-2.3. Planning and Building staff will work with project applicants to limit GHG emissions from construction equipment by selecting one of the following measures, at a minimum, as appropriate to the construction project: – Substitute electrified equipment for diesel- and gasoline-powered equipment where practical. – Use alternatively fueled construction equipment on-site, where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel. – Avoid the use of on-site generators by connecting to grid electricity or utilizing solar-powered equipment. – Limit heavy-duty equipment idling time to a period of 3 minutes or less, exceeding CARB regulation minimum requirements of 5 minutes.	**Not Applicable**. The City is the responsible party for these measures. The project would not conflict with implementation.

Source: City of Vallejo, 2012, City of Vallejo Climate Action Plan.

GHG reductions are also achieved as a result of State of California energy and water efficiency requirements for new residential developments. These efficiency improvements correspond to reductions in secondary GHG emissions. For example, in California, most of the electricity that powers homes is derived from natural gas combustion. Therefore, energy-saving measures, such as Title 24, reduces GHG emissions from the power generation facilities by reducing load demand.

The proposed project would be required to comply with existing regulations, including applicable measures from the City's CAP, or would be directly affected by the outcomes (vehicle trips and energy consumption would be less carbon-intensive due to statewide compliance with future low carbon fuel standard amendments and increasingly stringent Renewable Portfolio Standards). As such, the project would not conflict with any other state-level regulations pertaining to GHGs.

CARB SCOPING PLAN

The California State Legislature adopted AB 32 in 2006. AB 32 focuses on reducing GHGs (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) to 1990 levels by the year 2020. Pursuant to the requirements in AB 32, the ARB adopted the Climate Change Scoping Plan (Scoping Plan) in 2008, which outlines actions recommended to obtain that goal. The Scoping Plan provides a range of GHG reduction actions that include direct regulations, alternative compliance

mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as the cap-and-trade program, and an AB 32 implementation fee to fund the program.

The latest CARB Climate Change Scoping Plan (2017) outlines the State's strategy to reduce the State's GHG emissions to 40 percent below 1990 levels by 2030 pursuant to SB 32. The CARB Scoping Plan is applicable to State agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool that is used to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

The 2017 Scoping Plan Update identifies additional GHG reduction measures necessary to achieve the 2030 target. These measures build upon those identified in the First Update to the Climate Change Scoping Plan (2013). Although a number of these measures are currently established as policies and measures, some measures have not yet been formally proposed or adopted. It is expected that these measures or similar actions to reduce GHG emissions would be adopted as required to achieve statewide GHG emissions targets.

As shown in *Table 4.6-5: Project Consistency with Applicable CARB Scoping Plan Measures*, the proposed project is consistent with most of the strategies, while others are not applicable to the proposed project.

Table 4.6-5: Project Consistency with Applicable CARB Scoping Plan Measures

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
Transportation	California Cap-and-Trade Program Linked to Western Climate Initiative	Regulation for the California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanism October 20, 2015 (CCR 95800)	**Consistent.** The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, whether generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and from combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period. The project does not conflict or impede this program. MM GHG-12 requires the applicant to purchase carbon offsets available as a result this program.

Table 4.6-5: Project Consistency with Applicable CARB Scoping Plan Measures

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
	California Light-Duty Vehicle Greenhouse Gas Standards	Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles	**Consistent**. This measure applies to all new vehicles starting with model year 2012. The proposed project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with construction and operation of the proposed project would be required to comply with the Pavley emissions standards.
		2012 LEV III Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards	**Consistent.** The LEV III amendments provide reductions from new vehicles sold in California between 2017 and 2025. Passenger vehicles associated with the site would comply with LEV III standards.
	Low Carbon Fuel Standard	2009 readopted in 2015. Regulations to Achieve Greenhouse Gas Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480	**Consistent.** This measure applies to transportation fuels utilized by vehicles in California. The proposed project would not conflict with implementation of this measure. Motor vehicles associated with construction and operation of the proposed project would utilize low carbon transportation fuels as required under this measure.
	Regional Transportation-Related Greenhouse Gas Targets.	SB 375. Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28	**Consistent**. The project would provide development in the region that is consistent with the growth projections in the Regional Transportation Plan/Sustainable Communities Strategy (SCS) (Plan Bay Area 2040).
	Goods Movement	Goods Movement Action Plan January 2007	**Not applicable**. The proposed project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
	Medium/Heavy-Duty Vehicle	2010 Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer Greenhouse Gas Regulation	**Consistent**. This measure applies to medium and heavy-duty vehicles that operate in the state. The proposed project would not conflict with implementation of this measure. Medium and heavy-duty vehicles associated with construction and operation of the proposed project would be required to comply with the requirements of this regulation.
	High-Speed Rail	Funded under SB 862	**Not applicable**. This is a statewide measure that cannot be implemented by a project applicant or Lead Agency.
Electricity and Natural Gas	Energy Efficiency	Title 20 Appliance Efficiency Regulation	**Consistent.** The proposed project would not conflict with implementation of this measure. The proposed project would comply with the latest energy efficiency standards.

Table 4.6-5: Project Consistency with Applicable CARB Scoping Plan Measures

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
		Title 24 Part 6 Energy Efficiency Standards for Residential and Non-Residential Building	
		Title 24 Part 11 California Green Building Code Standards	
	Renewable Portfolio Standard/Renewable Electricity Standard.	2010 Regulation to Implement the Renewable Electricity Standard (33% 2020)	**Consistent**. The proposed project would obtain electricity from the electric utility, PG&E. PG&E obtained 33 percent of its power supply from renewable sources in 2016. Therefore, the utility would provide power when needed on-site that is composed of a greater percentage of renewable sources.
		SB 350 Clean Energy and Pollution Reduction Act of 2015 (50% 2030)	
	Million Solar Roofs Program	Tax incentive program	**Consistent.** This measure is to increase solar throughout California, which is being done by various electricity providers and existing solar programs. Homeowners within the project would be able to take advantage of incentives that are in place at the time of construction.
Water	Water	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The proposed project would comply with the California Green Building Standards Code, which requires a 20 percent reduction in indoor water use. The proposed project would also comply with the City's Water-Efficient Landscape Requirements (Chapter 16.71 of the Vallejo Municipal Code).
		SBX 7-7—The Water Conservation Act of 2009	
		Model Water Efficient Landscape Ordinance	
Green Buildings	Green Building Strategy	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The State goal is to increase the use of green building practices. The proposed project would implement required green building strategies through existing regulation that requires the proposed project to comply with various CalGreen requirements. The proposed project includes sustainability design features that support the Green Building Strategy.
Industry	Industrial Emissions	2010 CARB Mandatory	**Not applicable.** The proposed project does not include industrial land uses.

Table 4.6-5: Project Consistency with Applicable CARB Scoping Plan Measures

Scoping Plan Sector	Scoping Plan Measure	Implementing Regulations	Project Consistency
		Reporting Regulation	
Recycling and Waste Management	Recycling and Waste	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The proposed project would not conflict with implementation of these measures. The proposed project is required to achieve the recycling mandates via compliance with the CALGreen code. The City has consistently achieved its State recycling mandates.
		AB 341 Statewide 75 Percent Diversion Goal	
Forests	Sustainable Forests	Cap and Trade Offset Projects	**Not applicable.** The proposed project site is in an area designated for urban uses. No forested lands exist on site.
High Global Warming Potential	High Global Warming Potential Gases	CARB Refrigerant Management Program CCR 95380	**Not applicable**. The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage system. The proposed Costco building would have large freezers, HVAC and refrigeration systems. The new equipment would be compliant with current building codes and efficiency standards and would be inspected as part of the building permit process. Additionally, the equipment in the new Costco building would be more efficient compared to the equipment in the existing Costco building.
Agriculture	Agriculture	Cap and Trade Offset Projects for Livestock and Rice Cultivation	**Not applicable**. The proposed project site is designated for urban development. No grazing, feedlot, or other agricultural activities that generate manure occur currently exist on-site or are proposed to be implemented by the proposed project.

Source: California Air Resources Board (CARB), *California's 2017 Climate Change Scoping Plan*, November 2017 and CARB, *Climate Change Scoping Plan*, December 2008.

As demonstrated in the table above, the project would not conflict with the CARB Scoping Plan. Therefore, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. Impacts would be less than significant.

PLAN BAY AREA 2040

Plan Bay Area sets forth regional transportation policy and provides capital program planning for all regional, State, and Federally funded projects. It should be noted that Plan Bay Area neither funds specific transportation projects nor changes local land use policies. Local land use authority is maintained by individual jurisdictions. Plan Bay Area does set a roadmap for future transportation investments and identifies what it would take to accommodate expected growth. In addition, Plan Bay Area provides strategic investment recommendations to improve regional transportation system performance over the next 25 years. Plan Bay Area includes employment and household projections for the region. The MTC

forecasted that, between 2010 and 2040, the San Francisco Bay Area will see increases in the number of jobs, population, and households.

The project is located in an area that is planned for development as contemplated in the City's General Plan and is consistent with the Retail/Entertainment and Mix of Housing Types/Medium Density land use designations. As discussed in the Population and Housing section of this EIR, (Section 4.12), the project represents a 0.43 percent increase in the City's 2018 population and would be well within the range of population growth forecasted by ABAG, which is 131,800 by 2040.

The proposed project would be consistent with the overall goals of Plan Bay Area 2040 to provide housing, healthy and safe communities, increase economic vitality, preserve open space, and climate protection with an overall goal to reduce VMT. In addition, the project is an infill development as it is located in a developed area of the City and surrounded by existing development. The project also would include retail services adjacent to existing and proposed residential development.

The Vallejo General Plan includes policies that facilitate implementation of the goals of Plan Bay Area and would reduce GHG emissions from transportation sources. As shown in *Table 4.6-6: Project Consistency with Vallejo General Plan Policies Relative to Plan Bay Area*, the proposed project is consistent with the applicable General Plan Policies that would implement Plan Bay Area goals.

Table 4.6-6: Project Consistency with Vallejo General Plan Policies Relative to Plan Bay Area

General Plan Policy	Project Consistency
Policy MTC-1.1: *Regional Transit Connections*. Enhance regional transit service for residents, employees, and visitors	**Consistent**. The project is an infill development that would locate residents and retail services adjacent to existing uses. Additionally, the project would include a new SolTrans bus pull-out per MM TR-4. MM GHG-3 would also implement a Transportation Demand Management (TDM) program for residential and non-residential uses.
Policy MTC-1.2: *Transit Ridership*. Increase regional transit and ferry ridership to and from Vallejo, particularly by commuters and visitors.	
Policy MTC-1.3: *First/Last Mile Connections*. Provide enhancements to the local transit network that make it easier and more convenient to use regional transit.	
Policy MTC-2.4: *Citywide Mobility*. Maintain a transportation network that provides mobility for all ages and abilities and for all areas of the community.	**Consistent**. As noted above, the would include a new bus pull-out per MM TR-4 and a TDM program (MM GHG-3). Additionally, the project would include traffic calming measures, pedestrian connectivity features, and internal trails to complement the transportation network (refer to MM GHG-4 through GHG-6).
Policy MTC-2.7: *Complete Streets*. Increase accessibility for and use of streets by pedestrians, bicyclists, and transit riders.	
Policy MTC-2.8: *Transportation Demand Management*. Decrease dependence on single-occupant vehicles by increasing the attractiveness of other modes of transportation.	**Consistent**. As noted above, MM GHG-3 would include a TDM program to decrease the dependence on single-occupant vehicles. MM TR-4 also requires a new SolTrans bus pull-out.
Policy MTC-2.9: *Local Transit*. Encourage increased local transit ridership to work, school, shopping, and recreation.	

Table 4.6-6: Project Consistency with Vallejo General Plan Policies Relative to Plan Bay Area

General Plan Policy	Project Consistency
Policy MTC-2.12: ***Resource Efficiency***. Facilitate use of emerging vehicle technology to help reduce vehicle miles traveled and greenhouse gas emissions.	**Consistent**. As noted above, the TDM program (MM GHG-3) would include measures that facilitate the use of emerging vehicle technology. Further, the project is also required to provide electric vehicle charging stations.
Policy MTC-3.1: ***Coordinated Transportation Planning***. Ensure that improvements to the transportation network support a land use pattern that connects the community and facilitates travel among Vallejo's neighborhoods.	**Consistent**. The project includes traffic calming measures, pedestrian connectivity features, and internal trails to connect the community to the surrounding uses.
Policy MTC-3.2: ***Local Transit***. Encourage improvements in citywide transit service that directly connect major destinations in Vallejo, including commercial districts, job centers, and projected growth areas.	**Consistent**. As noted above, MM GHG-3 would include a TDM program to encourage the use of citywide transit and MM TRA-4 requires a new SolTrans bus pull-out.
Policy MTC-3.4: ***Walking, Biking, and Rolling***. Expand the local bicycle and trail network to provide safe, healthy, attractive options for non-motorized travel among destinations in Vallejo, including for wheelchair users.	**Consistent**. As noted above, the TDM program, traffic calming measures, pedestrian connectivity features, and internal trails would expand the trail network and provide non-motorized transportation options.
Policy CP-1.6: ***Active Transportation Network***. Promote the health benefits of walking and bicycling by providing a convenient and safe network of bicycle paths and routes, sidewalks, pedestrian paths, and trails, including connections with major destinations such as civic facilities, educational institutions, employment centers, shopping, and recreation areas.	

As noted above, the proposed project would develop the project site with uses consistent with the General Plan. The proposed project would be consistent with the overall goals of Plan Bay Area 2040 in concentrating new development in locations where there is existing infrastructure as the proposed project would redevelop the project site to provide a mix of land uses. Additionally, the project includes numerous design features and mitigation measures to reduce VMT. The project proposes commercial and residential land uses (with open space) adjacent to existing residential and commercial uses and within three miles to downtown Vallejo. The proposed project also incorporates sidewalks, paseos, and a trail designed to promote a pedestrian- and bicycle-friendly environment; to encourage alternative transportation between the commercial and residential project elements; and, improve access to the proposed open space. Therefore, the proposed project would be consistent with the Plan Bay Area goals of providing housing, healthy and safe communities, and climate protection and would not conflict with the land use concept plan in Plan Bay Area 2040. Impacts would be less than significant.

Therefore, implementation of the project, including Mitigation Measures GHG-1 through GHG-12 listed in the previous section, would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and this impact would be less than significant. In summary, the proposed project, an infill and mixed-use project within a currently developed area would not conflict with an applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions.

4.6.5 CONCLUSION

As described above, with the implementation of mitigation, the proposed project would not exceed BAAQMD efficiency metric of 4.6 MT CO_2e/year/SP and the substantial progress efficiency metrics of 4.05 $MTCO_2$e/year/SP and 2.76 $MTCO_2$e/year/SP for 2023 and 2030, respectively. Additionally, the project would be consistent with the City of Vallejo's CAP, CARB Scoping Plan, and MTC Plan Bay Area. Therefore, project-related operational GHG emission impacts would be less than significant.

4.6.6 CUMULATIVE IMPACTS

It is generally the case that an individual project of this size and nature is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory. GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective. By definition, considering findings by the IPCC and State of California, cumulative GHG emissions are significant and unavoidable. As discussed above, the State has implemented a vast array of regulations, policies, and programs to reduce the State's contribution to global GHG emissions.

Project emissions would not exceed the BAAQMD thresholds with the implementation of Mitigation Measures GHG-1 through GHG-12. Therefore, the project's impacts do not represent a cumulatively considerable contribution toward global GHG emissions. Similarly, all future development with the potential to generate GHG emissions would be required to demonstrate compliance with applicable federal and State regulatory requirements, including General Plan goals and policies of the affected jurisdiction, intended to reduce and/or avoid potential adverse environmental effects. The proposed project would be consistent with the goals and policies in the CARB Scoping Plan, Plan Bay Area, and the Vallejo Climate Action Plan. As such, the cumulative impacts to GHG emissions would be mitigated on a project-by-project level, and in accordance with the established regulatory framework, through the established regulatory review process.

4.6.7 REFERENCES

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