4.6 GREENHOUSE GAS EMISSIONS

This section provides information on potential impacts from the GHG emissions generated either directly or indirectly by the Project. This section also addresses the potential of the Project to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Information contained in this section is from the GHG modeling parameter and output prepared for the Project in the *Hudson Ranch Greenhouse Gas Screening Letter – County of Imperial,* dated June 6, 2021, prepared by Ldn Consulting, Inc. (Appendix G). This analysis follows the ICAPCD recommendations for preparing a GHG emissions analysis under CEQA.

4.6.1 Background Information

Climate change is a recorded change in the Earth's average weather measured by variables such as wind patterns, storms, precipitation, and temperature. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), which are known as greenhouse gases (GHGs). Historical records show that global temperature changes have occurred naturally in the past, such as during previous ice ages. However, it has been shown that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere. The years 2016 and 2020 are tied for the Earth's warmest year since recordkeeping began in 1880, and 16 of the 17 warmest years in the instrumental record occurred since 2001. The average global temperature has risen more than 2.0 °F (1.2 °C) since 1880 (NASA 2021).

The global atmospheric concentration of CO_2 has increased from a pre-industrial (roughly 1750) value of about 280 ppm to a monthly mean value of 414 ppm in December 2020 (NOAA 2021). According to the Global Greenhouse Emissions Data website (USEPA 2014), the breakdown of global GHG emissions by sector consists of: 25 percent from electricity and heat production; 21 percent from industry; 24 percent from agriculture, forestry and other land use activities; 14 percent from transportation; 6 percent from building energy use; and 10 percent from all other sources of energy use.

According to Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2018, prepared by USEPA, April 13, 2020, in 2018 total U.S. GHG emissions were 6,676.6 million metric tons (MMT) of CO_2 equivalent (CO_2e) emissions. Total U.S. emissions have increased by 3.7 percent between 1990 and 2018, which is down from a high of 15.2 percent above 1990 levels in 2007. Emissions increased by 2.9 percent or 188.4 $MMTCO_2e$ between 2017 and 2018. The recent increase in GHG emissions was largely driven by an increase in CO_2 emissions from fossil fuel combustion, a result of multiple factors including greater heating and cooling needs due to a colder winter and hotter summer in 2018 compared to 2017.

According to CARB (2020), the State of California created 425 $MMTCO_2e$ in 2018. The breakdown of California GHG emissions by sector consists of: 39.9 percent from transportation, 21.0 percent from industrial, 14.8 percent from electricity generation, 7.7 percent from agriculture, 6.1 percent from residential buildings, and 3.7 percent from commercial buildings. In 2018, GHG emissions were 0.8 $MMTCO_2e$ higher than 2017 levels and are 6 $MMTCO_2e$ below the 2020 GHG limit of 431 $MMTCO_2e$ established by AB 32.

4.6.2 Greenhouse Gases

GHGs are global pollutants and are therefore unlike criteria air pollutants such as ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and toxic air contaminants (TACs), which are pollutants of regional and local

concern (see Section 4.1, Air Quality, of this SEIR). While pollutants with localized air quality effects have relatively short atmospheric lifetimes (generally on the order of a few days), GHGs have relatively long atmospheric lifetimes, ranging from one year to several thousand years. Long atmospheric lifetimes allow GHGs to disperse around the globe. Therefore, GHG effects are global, as opposed to the local and/or regional air quality effects of criteria air pollutant and TAC emissions.

California AB 32 defines greenhouse gases as any of the following compounds: carbon dioxide (CO_2) methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6) (California Health and Safety Code Section 38505[g]). CO_2, followed by CH_4 and N_2O, are the most common GHGs that result from human activity.

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the "cumulative radiative forcing effect of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas" (USEPA 2018). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main greenhouse gases that have been attributed to human activity include CH_4, which has a GWP of 21, and N_2O, which has a GWP of 310. Table 4.6-1 presents the GWP and atmospheric lifetimes of common GHGs.

Table 4.6-1: Global Warming Potentials, Atmospheric Lifetimes, and Abundances of GHGs

Gas	Atmospheric Lifetime (year)[1]	Global Warming Potential (100 Year Horizon)[2]	Atmospheric Abundance
Carbon Dioxide (CO_2)	50-200	1	379 ppm
Methane (CH_4)	9-15	25	1,774 ppb
Nitrous Oxide (N_2O)	114	298	319 ppb
HFC-23	270	14,800	18 ppt
HFC-134a	14	1,430	35 ppt
HFC-152a	1.4	124	3.9 ppt
PFC: Tetrafluoromethane (CF_4)	50,000	7,390	74 ppt
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200	2.9 ppt
Sulfur Hexafluoride (SF_6)	3,200	22,800	5.6 ppt

Notes:
[1] Defined as the half-life of the gas.
[2] Compared to the same quantity of CO_2 emissions and is based on the Intergovernmental Panel On Climate Change (IPCC) 2007 standard, which is utilized in CalEEMod (Version 2016.3.2),that is used in this report (CalEEMod user guide: Appendix A).
Definitions: ppm = parts per million; ppb = parts per billion; ppt = parts per trillion
Source: CAPCOA, 2017

Human-caused sources of CO_2 include combustion of fossil fuels (coal, oil, natural gas, gasoline and wood). Data from ice cores indicate that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years. Concentrations of CO_2 have increased in the atmosphere since the industrial revolution. CH_4 is the main component of natural gas and also arises naturally from anaerobic decay of organic matter. Human-caused sources of natural gas include landfills, fermentation of manure, and cattle farming. Human-caused sources of N_2O include combustion of fossil fuels and industrial processes such as nylon production and production of nitric acid.

Other GHGs are present in trace amounts in the atmosphere and are generated from various industrial or other uses. The sources of GHG emissions, GWP, and atmospheric lifetime of GHGs are all important variables to be considered in the process of calculating CO_2e for discretionary land use projects that require a climate change analysis.

4.6.3 Regulatory Setting

The regulatory setting related to global climate change is addressed through the efforts of various international, federal, State, regional, and local government agencies. These agencies work jointly, as well as individually, to reduce GHG emissions through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies responsible for global climate change regulations are discussed below.

International

International and federal legislation have been enacted to deal with GCC issues. In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change (IPCC) to assess the scientific, technical, and socioeconomic information relevant to understanding the scientific basis for human-induced climate change, its potential impacts, and options for adaptation and mitigation. In 1992, the United States joined other countries around the world in signing the United Nations' Framework Convention on Climate Change (UNFCCC) agreement with the goal of controlling GHG emissions. The parties of the UNFCCC adopted the Kyoto Protocol, which set binding GHG reduction targets for 37 industrialized countries, the objective of reducing their collective GHG emissions by 5 percent below 1990 levels by 2012. The Kyoto Protocol has been ratified by 182 countries but has not been ratified by the United States. It should be noted that Japan and Canada opted out of the Kyoto Protocol, and the remaining developed countries that ratified the Kyoto Protocol have not met their Kyoto targets. The Kyoto Protocol expired in 2012, and the amendment for the second commitment period from 2013 to 2020 has not yet entered into legal force. The Parties to the Kyoto Protocol negotiated the Paris Agreement in December 2015, agreeing to set a goal of limiting global warming to less than 2 degrees Celsius compared with pre-industrial levels. The Paris Agreement has been adopted by 195 nations with 147 ratifying it, including the United States by President Obama, who ratified it by Executive Order on September 3, 2016. On June 1, 2017, President Trump announced that the United States is withdrawing from the Paris Agreement; and on January 21, 2021, President Biden signed an executive order rejoining the Paris Agreement.

Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere—CFCs, halons, carbon tetrachloride, and methyl chloroform—were to be phased out, with the first three by the year 2000 and methyl chloroform by 2005.

Federal

The USEPA is responsible for implementing federal policy to address global climate change. The federal government administers a wide array of public-private partnerships to reduce U.S. GHG intensity. These programs focus on energy efficiency, renewable energy, methane and other non-CO_2 gases, agricultural practices, and implementation of technologies to achieve GHG reductions. USEPA implements several voluntary programs that substantially contribute to the reduction of GHG emissions. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the Clean Air Act. The findings state:

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases: carbon dioxide (CO_2); methane (CH_4); nitrous oxide (N_2O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulfur hexafluoride (SF_6), into the atmosphere, threaten the public health and welfare of current and future generations.

- **Cause or Contribute Finding**: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

These findings did not impose any requirements on industry or other entities; however, since 2009 the USEPA has been providing GHG emission standards for vehicles and other stationary sources of GHG emissions that are regulated by the USEPA. On September 13, 2013, the USEPA Administrator signed 40 CFR Part 60, that limits emissions from new sources to 1,100 pounds of CO_2 per MWh for fossil fuel-fired utility boilers and 1,000 pounds of CO_2 per MWh for large natural gas-fired combustion units.

On August 3, 2015, the USEPA announced the Clean Power Plan, emissions guidelines for U.S. states to follow in developing plans to reduce GHG emissions from existing fossil fuel-fired power plants (Federal Register Vol. 80, No. 205, October 23, 2015). On February 9, 2016, the Supreme Court stayed implementation of the Clean Power Plan due to a legal challenge from 29 states; and, in April 2017, the Supreme Court put the case on a 60-day hold and directed both sides to make arguments for whether it should keep the case on hold indefinitely or close it and remand the issue to the USEPA. On October 11, 2017, the USEPA issued a formal proposal to repeal the Clean Power Plan; however, the repeal of the Plan will require following the same rule-making system used to create regulations and will likely result in court challenges.

State

CARB has the primary responsibility for implementing state policy to address global climate change; however, State regulations related to global climate change affect a variety of State agencies. CARB, which is a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both the federal and State air pollution control programs within California. In this capacity, the CARB conducts research, sets CAAQS, compiles emission inventories, develops suggested control measures, provides oversight of local programs, and prepares the SIP. In addition, the CARB establishes emission standards for motor vehicles sold in California, consumer products (e.g., hairspray, aerosol paints, and barbeque lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions.

In 2008, CARB approved a Climate Change Scoping Plan that proposes a "comprehensive set of actions designed to reduce overall carbon GHG emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs, and enhance public health" (CARB 2008). The Climate Change Scoping Plan has a range of GHG reduction actions which include direct regulations; alternative compliance mechanisms; monetary and nonmonetary incentives; voluntary actions; and market-based mechanisms such as a cap-and-trade system. In 2014, CARB approved the First Update to the Climate Change Scoping Plan that identifies additional strategies moving beyond the 2020 targets to the year 2050. On December 14, 2017, CARB adopted California's 2017 Climate Change Scoping Plan (CARB 2017) that provides specific statewide policies and measures to achieve the 2030 GHG reduction target of 40 percent below 1990 levels by 2030 and the aspirational 2050 GHG reduction target of 80 percent below 1990 levels by 2050. In addition, the State has passed the following laws directing

CARB to develop actions to reduce GHG emissions, which are listed below in chronological order, with the most current first.

Executive Order N-79-20

The California Governor issued Executive Order (EO) N-79-20 on September 23, 2020, that requires all new passenger cars and trucks and commercial drayage trucks sold in California to be zero-emissions by the year 2035 and all medium-heavy-duty vehicles (commercial trucks) sold in the state to be zero-emissions by 2045 for all operations where feasible. EO N-79-20 also requires all off-road vehicles and equipment to transition to 100 percent zero-emission equipment, where feasible, by 2035.

Title 24, Part 6, Energy Efficiency Standards

California Code of Regulations (CCR) Title 24, Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings (Title 24) was first established 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 efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels results in GHG emissions; and energy efficient buildings require less electricity. Therefore, increased energy efficiency results in decreased GHG emissions.

Title 24 standards are updated on a three-year schedule, and the most current 2019 standards went into effect on January 1, 2020. The Title 24 standards now require that the average new home built in California will now use zero-net-energy and that nonresidential buildings will use about 30 percent less energy than the 2016 standards due mainly to lighting upgrades. The 2019 standards also encourage the use of battery storage and heat pump water heaters and require the more widespread use of LED lighting as well as improve a building's thermal envelope through high performance attics, walls, and windows. The 2019 standards also require improvements to ventilation systems by requiring highly efficient air filters to trap hazardous air particulates as well as improvements to kitchen ventilation systems.

Title 24, Part 11, California Green Building Standards

CCR Title 24, Part 11: California Green Building Standards (Title 24) was developed in response to continued efforts to reduce GHG emissions associated with energy consumption. The most current version is the 2019 CALGreen Code, which became effective on January 1, 2020, and replaced the 2016 CALGreen Code.

The CALGreen Code contains requirements for construction site selection, storm water control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The code provides for design options that allow the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency.

The CALGreen Code provides standards for bicycle parking, carpool/vanpool/electric vehicle spaces, light and glare reduction, grading and paving, energy-efficient appliances, renewable energy, graywater systems, water-efficient plumbing fixtures, recycling and recycled materials, pollutant controls (including moisture control and indoor air quality), acoustical controls, storm water management, building design, insulation, flooring, and framing, among others. Implementation of the CALGreen Code measures reduced

energy consumption and vehicle trips and encourages the use of alternative-fuel vehicles, which reduces pollutant emissions.

Some of the notable changes in the 2019 CALGreen Code over the prior 2016 CALGreen Code include: an alignment of building code engineering requirements with the national standards that include anchorage requirements for solar panels, provide design requirements for buildings in tsunami zones, increase MERV for air filters from 8 to 13, increase electric vehicle charging requirements in parking areas, and set minimum requirements for use of shade trees.

Renewable Portfolio Standards

The State of California requires that utility providers provide renewable energy to their customers. Senate Bill (SB) 100 was adopted September 2018 and requires that by December 1, 2045, 100 percent of retail sales of electricity be generated from renewable or zero-carbon emission sources of electricity. SB 100 supersedes the renewable energy requirements set by SB 350, SB 1078, SB 107, and SB X1-2. SB 100 codified the interim renewable energy thresholds from the prior Bills of: 33 percent by 2020; 40 percent by December 31, 2024; 45 percent by December 31, 2027; and 50 percent by December 31, 2030.

Executive Order B-30-15, Senate Bill 32 & Assembly Bill 197 (Statewide Year 2030 GHG Targets)

California EO B-30-15 (April 29, 2015) set an "interim" statewide emission target to reduce greenhouse emissions to 40 percent below 1990 levels by 2030 and directed State agencies with jurisdiction over greenhouse gas emissions to implement measures pursuant to statutory authority to achieve this 2030 target and the 2050 target of 80 percent below 1990 levels. Specifically, the EO directed CARB to update the Scoping Plan to express this 2030 target in metric tons. Assembly Bill 197 (AB 197) (September 8, 2016) and SB 32 (September 8, 2016) codified into statute the GHG emissions reduction targets of at least 40 percent below 1990 levels by 2030 as detailed in EO B-30-15. AB 197 also requires additional GHG emissions reporting to CARB from stationary sources and requires CARB to provide sources of GHG emissions on its website that is broken down to sub-county levels. AB 197 requires CARB to consider the social costs of emissions impacting disadvantaged communities.

Executive Order B-29-15 and Senate Bill X7-7, Water Conservation Measures

The Water Conservation Act of 2009 sets an overall goal of reducing per-capita urban water use by 20 percent by December 31, 2020. The state is required to make incremental progress toward this goal by reducing per-capita water use by at least 10 percent by December 31, 2015. This is an implementing measure of the Water Sector of the AB 32 Scoping Plan. Reduction in water consumption directly reduces the energy necessary and the associated emissions to convene, treat, and distribute the water; it also reduces emissions from wastewater treatment.

The Department of Water Resources adopted a regulation on February 16, 2011, that sets forth criteria and methods for exclusion of industrial process water from the calculation of gross water use for purposes of urban water management planning. The regulation would apply to all urban retail water suppliers required to submit an Urban Water Management Plan, as set forth in the Water Code, Division 6, Part 2.6, Sections 10617 and 10620.

On April 1, 2015, the California Governor issued Executive Order B-29-15 that directed the State Water Resources Control Board (SWRCB) to impose restrictions to achieve a statewide 25-percent reduction in urban water usage and directed the Department of Water Resources to replace 50 million square feet of

lawn with drought-tolerant landscaping through an update to the State's Model Water Efficient Landscape Ordinance. The Ordinance also requires installation of more efficient irrigation systems, promotes usage of greywater and onsite stormwater capture, and limits the turf planted in new residential landscapes to 25 percent of the total area and restricts turf from being planted in median strips or in parkways unless the parkway is next to a parking strip where a flat surface is required to enter and exit vehicles. EO B-29-15 and SB X7-7 would reduce GHG emissions associated with the energy used to transport and filter water.

Senate Bill 97 and Amendments to the California Environmental Quality Act Guidelines

SB 97 directed the California Natural Resources Agency (CNRA) to adopt amendments to the CEQA Guidelines that require evaluation of GHG emissions or the effects of GHG emissions by January 1, 2010. The CNRA has done so, and the amendments to the CEQA Guidelines, in a new Section 15064.4, entitled Determining the Significance of Impacts from Greenhouse Gas Emissions, provide that:

a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of greenhouse gas emissions resulting from a project.

b) A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment.

    1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

    2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and

    3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions.

The amendments also add a new Section 15126.4(c), Mitigation Measures Related to Greenhouse Gas Emissions. Generally, this State CEQA Guidelines section requires lead agencies to consider feasible means—supported by substantial evidence and subject to monitoring or reporting—of mitigating the significant effects of GHG emissions. Potential measures to mitigate the significant effects of GHG emissions are identified, including those outlined in Appendix F, Energy Conservation, of the State CEQA Guidelines.

Senate Bill 375

SB 375 was adopted September 2008 in order to support the State's climate action goals to reduce GHG emissions through coordinated regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires CARB to set regional targets for GHG emissions reductions from passenger vehicle use. In 2010, CARB established targets for 2020 and 2035 for each Metropolitan Planning Organization (MPO) within the state. It was up to each MPO to adopt a sustainable communities strategy (SCS) that will prescribe land use allocation in that MPO's Regional

Transportation Plan (RTP) to meet CARB's 2020 and 2035 GHG emission reduction targets. These reduction targets are required to be updated every eight years; and in June 2017 CARB released Staff Report Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Target, which provided recommended GHG emissions reduction targets for Southern California Association of Governments (SCAG) of 8 percent by 2020 and 21 percent by 2035.

The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), adopted by SCAG April 7, 2016, provides a 2020 GHG emission reduction target of 8 percent and a 2035 GHG emission reduction target of 18 percent. SCAG will need to develop additional strategies in its next revision of the RTP/SCS in order to meet CARB's new 21-percent GHG emission reduction target for 2035. CARB is also charged with reviewing SCAG's RTP/SCS for consistency with its assigned targets.

City and County land use policies, including General Plans, are not required to be consistent with the RTP and associated SCS. However, new provisions of CEQA incentivize, through streamlining and other provisions, qualified projects that are consistent with an approved SCS and categorized as "transit priority projects."

Assembly Bill 32, The California Global Warming Solutions Act of 2006

The California Legislature adopted the public policy position that global warming is "a serious threat to the economic well-being, public health, natural resources, and the environment of California" (California Health and Safety Code, Section 38501). Further, the State Legislature has determined that:

> "…the potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra Nevada snowpack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious disease, asthma, and other human health-related problems."

The State Legislature also states that:

> "Global warming will have detrimental effects on some of California's largest industries, including agriculture, wine, tourism, skiing, recreational and commercial fishing, and forestry. It will also increase the strain on electricity supplies necessary to meet the demand for summer air-conditioning in the hottest parts of the State (California Health and Safety Code, Section 38501)."

These public policy statements became law with the enactment of AB 32, the California Global Warming Solutions Act of 2006, signed by Governor Arnold Schwarzenegger in September 2006. AB 32 is now codified as Sections 38500 through 38599 of the California Health and Safety Code.

AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction is to be accomplished through an enforceable statewide cap on GHG emissions to be phased in starting in 2012. AB 32 directs CARB to establish this statewide cap based on 1990 GHG emissions levels; to disclose how it arrived at the cap; to institute a schedule to meet the emissions cap; and to develop tracking, reporting, and enforcement mechanisms. Emissions reductions under AB 32 are to include carbon sequestration projects and best management practices that are technologically feasible and cost effective. As of the

date of this Draft SEIR, CARB has not promulgated GHG emissions or reporting standards that are directly applicable to the Project.

Executive Order S-3-05

On June 1, 2005, Governor Arnold Schwarzenegger signed EO S-3-05, which proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce snowpack in the Sierra Nevada Mountains, could further exacerbate California's air quality problems, and could potentially cause a rise in sea levels. In an effort to avoid or reduce the impacts of climate change, EO S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. It should be noted that the 80 percent below 1990 levels by 2050 is currently an aspirational goal by EO S-3-05 but has not yet been codified into law.

Assembly Bill 1493, Clean Car Standards

AB 1493, adopted September 2002, also known as Pavley I, requires the development and adoption of regulations to achieve the maximum feasible reduction of GHGs emitted by noncommercial passenger vehicles, light-duty trucks, and other vehicles used primarily for personal transportation in the state. Although setting emissions standards on automobiles is solely the responsibility of the USEPA, the federal Clean Air Act allows California to set state-specific emission standards on automobiles if the State first obtains a waiver from the USEPA. The USEPA granted California that waiver on July 1, 2009. The emission standards become increasingly more stringent through the 2016 model year. California is also committed to further strengthening these standards beginning in 2017 to obtain a 45-percent GHG reduction from 2020 model year vehicles (CARB 2009).

The second set of regulations, "Pavley II," was developed in 2010 and is being phased in between model years 2017 through 2025 with the goal of reducing GHG emissions by 45 percent by the year 2020 as compared to the 2002 fleet. The Pavley II standards were developed by linking the GHG emissions and formerly separate toxic tailpipe emissions standards previously known as the "LEV III" (third stage of the Low Emission Vehicle standards) into a single regulatory framework. The new rules reduce emissions from gasoline-powered cars as well as promote zero-emissions auto technologies such as electricity and hydrogen through increasing the infrastructure for fueling hydrogen vehicles. In 2009, the USEPA granted California the authority to implement the GHG standards for passenger cars, pickup trucks, and sport utility vehicles; and these GHG emissions standards are currently being implemented nationwide. However, USEPA has performed a midterm evaluation of the longer-term standards for model years 2022-2025; and, based on the findings of this midterm evaluation, the USEPA has proposed to amend the CAFE and GHG emissions standards for light vehicles for model years 2021 through 2026. The USEPA's proposed amendments do not include any extension of the legal waiver granted to California by the 1970 Clean Air Act which has allowed the State to set tighter standards for vehicle pipe emissions than the USEPA standards. On September 20, 2019, California filed suit over the USEPA decision to revoke California's legal waiver that has been joined by 22 other states.

Local – Imperial County Air Pollution Control District

The ICAPCD develops rules and regulations, establishes permitting requirements for stationary sources, inspects emission sources, and enforces such measures through educational programs or fines, when necessary. ICAPCD is directly responsible for reducing emissions from stationary, mobile, and indirect sources. The ICAPCD has not established formal quantitative or qualitative GHG emissions thresholds through a public rulemaking process. However, the ICAPCD has adopted the federal Prevention of

Significant Deterioration (PSD) and Title V GHG air permitting requirements by reference for stationary sources in Regulation IX in Rules 900 and 903, which are described below.

ICAPCD Rule 900

ICAPCD Rule 900 provides procedures for issuing permits to operate for industrial projects that are subject to Title V of the federal Clean Air Act Amendments of 1990 (Major Sources) of emissions, which is defined as a source that exceeds 100 tons per year of any regulated pollutant, including GHG emissions.

ICAPCD Rule 903

ICAPCD Rule 903 applies to any stationary source that would have the potential to emit hazardous air pollutants (HAPs). Rule 903 provides a *de minimis* emissions level of 20,000 tons of CO_2e per year, where if a stationary source produces less emissions than the *de minimis* emissions levels, the source is exempt from the Rule 903 recordkeeping and reporting requirements.

Thresholds of Significance

In order to assist in determining whether a project would have a significant effect on the environment, the County utilizes the State CEQA Guidelines Appendix G Guidelines. Appendix G states that a project may be deemed to have greenhouse gas impacts if it would:

Threshold a) **Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

Threshold b) **Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

4.6.4 Methodology

The GHG emissions related to construction and annual operations for both the Proposed Project and business-as-usual (BAU) scenario were calculated through use of the CalEEMod Version 2016.3.2. The BAU scenario is based on the CalEEMod default electricity intensity factors for IID, and the Proposed Project scenario adjusted the IID electricity intensity factors per the requirements of SB 100 that requires 53.3 percent renewable sources by opening year 2024. The GHG emissions modeling and CalEEMod printouts are provided in the GHG Analysis (Appendix G).

4.6.5 Project Impact Analysis

Threshold a) **Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

The Proposed Project may generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. Implementation of the Proposed Project is anticipated to generate GHG emissions from construction and operational activities, which have been analyzed separately below.

Project-Related Construction Emissions

Construction activities for the Proposed Project would occur over a two-year time frame that would occur over portions of the years 2021, 2022, and 2023. The CalEEMod model calculated that grading and construction of the Project will produce approximately 8,043.37 metric tons of carbon dioxide equivalent ($MtCO_2e$). It should also be noted that a direct comparison of construction GHG emissions with long-term thresholds would not be appropriate since construction emissions are short term in nature and would cease upon completion of construction. Other air districts, including the SCAQMD, recommend that GHG emissions from construction activities be amortized over 30 years, when construction emissions are compared to operational-related GHG emissions thresholds. Given this, the annual construction emission for the Proposed Project is 268.11 $MtCO_2e$ per year and is shown in Table 4.6-2. It should be noted that no thresholds of significance are provided for construction-related GHG emissions; however, the 30-year amortized construction-related GHG emissions have been accounted for in the operational emissions analysis that is discussed below.

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

Construction Year	GHG Emissions (Metric Tons/Year)					
	Bio-CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	CO_2e
2021	0.00	3,329.28	3,329,28	0.71	0.00	3,346.92
2022	0.00	3,613.71	3,613.71	0.67	0.00	3,630.35
2023	0.00	1,061.10	1,061.10	0.20	0.00	1,066.10
Total						8,043.37
Yearly Average Construction Emissions (Averaged over 30 years)						268.11

Source: LDN Consulting, 2021 (see Appendix G)

Project-Related Operational Emissions

GHG emissions created from the operation of the Proposed Project are shown in Table 4.6-3.

Table 4.6-3: Proposed Project Operations-Related GHG Emissions

Source	GHG Emissions (Metric Tons/Year)					
	Bio-CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	CO_2e
Area	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	13,961.81	13,961.81	0.33	0.07	13,991.06
Mobile	0.00	415.54	415.54	0.02	0.00	416.03
Onsite Forklifts	0.00	30.69	30.69	0.01	0.00	30.94
Stationary Emission	0.00	20.17	20.17	0.00	0.00	20.24
Waste	14.60	0.00	14.60	0.86	0.00	36.17
Water	351.48	379.54	731.03	36.11	0.85	1,888.36
Construction Emissions (Averaged over 30 years)						268.11
Project Total GHG Emissions						16,650.91

Source: LDN Consulting, 2021 (see Appendix G)

The GHG emissions shown in Table 4.6-3 are based on the proposed design detailed in the Project Description as well as IID's adherence to the State's Renewable Portfolio Standards (RPS) that require 60 percent of electricity provided by IID to be from zero-carbon emissions sources by the year 2030. Table 4.6-3 shows that the operational GHG emissions do not exceed either the USEPA's 25,000 $MtCO_2e$ emissions threshold or ICAPCD Rule 903 20,000-$MtCO_2e$ emissions threshold, where exceedance of either threshold would require the project to perform additional GHG emissions recordkeeping and reporting. However, operation of the Proposed Project would exceed the 900-$MtCO_2e$ screening threshold and is therefore required to show at least a 28.3-percent reduction over BAU conditions.

The BAU emissions were calculated for the opening year 2024. As can be seen in Table 4.6-3 above, the GHG emissions created from operation of the Proposed Project are primarily created from electricity usage, in the forms of onsite electricity usage and water conveyance. The BAU emissions calculations were based on utilization of the default IID electrical intensity factors. Table 4.6-4 shows the Proposed Project's operational GHG emissions without implementation of the State's RPS.

Table 4.6-4: Business-As-Usual Operations-Related GHG Emissions

Source	GHG Emissions (Metric Tons/Year)					
	Bio-CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	CO_2e
Area	0.00	0.00	0.00	0.00	0.00	0.00
Energy	0.00	29,884.23	29,884.23	0.68	0.14	29,943.32
Mobile	0.00	415.54	415.54	0.02	0.00	416.03
Onsite Forklifts	0.00	30.69	30.69	0.01	0.00	30.94
Stationary Emission	0.00	20.17	20.17	0.00	0.00	20.24
Waste	14.60	0.00	14.60	0.86	0.00	36.17
Water	351.48	812.39	1,163.87	36.12	0.86	2,322.02
Construction Emissions (Averaged over 30 years)						268.11
Project (BAU) Total GHG Emissions						33,037
Proposed Project Emissions (from Table 4.6-3)						16,651
Difference						16,386
Percent Reduction over BAU						49.5%

Source: LDN Consulting, 2021 (see Appendix G)

Table 4.6-4 shows the Proposed Project would have a 49.5-percent reduction in GHG emissions when compared to the BAU scenario without IID's implementation of the RPS. Since a 28.3-percent reduction is required, the Proposed Project would result in a less than significant impact. Furthermore, as detailed above, the Proposed Project would not exceed either the USEPA's 25,000-$MtCO_2e$ emissions threshold or ICAPCD Rule 903 20,000-$MtCO_2e$ emissions threshold, where exceedance of either threshold would require the Project to perform additional GHG emissions recordkeeping and reporting. Impacts would be less than significant.

Threshold b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The Proposed Project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions. As detailed above, neither the ICAPCD nor the County of Imperial has adopted a climate action plan; as such, the only applicable plan for reducing GHGs is the CARB's 2017 Climate Change Scoping Plan, which is discussed below.

Consistency with CARB's 2017 Scoping Plan

The Project's consistency with the list of feasible mitigation measures for individual projects provided in the CARB's 2017 Scoping Plan is shown in Table 4.6-5.

Table 4.6-5: Consistency with CARB's 2017 Scoping Plan Measures for Individual Projects

Measures from Scoping Plan	Project Consistency
Construction	
Enforce idling time restrictions for construction vehicles	Consistent. The Project Applicant will require that all off-road equipment utilized on the project site be registered with CARB and adhere to CARB's idling limitation rules.
Require construction vehicles to operate with the highest tier engines commercially available	Consistent. The Project Applicant has committed to Project Design Features that require all off-road equipment greater than 50 horsepower to utilize Tier 4 equipment, when commercially available.
Divert and recycle construction and demolition waste, and use locally-sourced building materials with a high recycled material content to the greatest extent feasible.	Consistent. The Project Applicant will require all contractors to adhere to the Title 24 Part 11 requirements that require diversion of a minimum of 65 percent of construction waste from landfills.
Minimize tree removal, and mitigate indirect GHG emissions increases that occur due to vegetation removal, loss of sequestration, and soil disturbance.	Consistent. Minimal vegetation currently is present on the project site; however, implementation of the Project would result in landscaping that would add more vegetation to the project site.
Utilize existing grid power for electric energy rather than operating temporary gasoline/diesel powered generators.	Consistent. The project site currently has electrical service that would be utilized to the fullest extent practical during construction of the Project.
Increase use of electric and renewable fuel powered construction equipment and require renewable diesel fuel where commercially available.	Consistent. The Project Applicant has committed to Project Design Features that encourage the use of alternative-fueled construction equipment.
Require diesel equipment fleets to be lower emitting than any current emission standard.	Consistent. The Project Applicant has committed to Project Design Features that encourage the use of alternative-fueled, lower emitting construction equipment.
Operation	
Comply with lead agency's standards for mitigating transportation impacts under SB 743	Consistent. The Project Applicant has committed to Project Design Features that require charging stations for electric vehicles and providing onsite eating opportunities, which conform with the goals of SB 743.
Require on-site EV charging capabilities for parking spaces serving the project to meet jurisdiction-wide EV proliferation goals.	Consistent. The Proposed Project will be required to meet the Title 24 Part 11 requirements with regard to onsite electric vehicle parking and charging stations.
Allow for new construction to install fewer on-site parking spaces than required by local municipal building code, if appropriate.	Consistent. The Project Applicant will review the parking provided to determine if reducing the number of parking spaces provided is possible.
Dedicate on-site parking for shared vehicles.	Consistent. The Proposed Project will be required to meet the Title 24 Part 11 requirements with regard to dedicated spaces for carpools and clean air vehicles.

Table 4.6-5: Consistency with CARB's 2017 Scoping Plan Measures for Individual Projects

Measures from Scoping Plan	Project Consistency
Provide adequate, safe, convenient, and secure on-site bicycle parking storage in multi-family residential projects and in non-residential projects.	Consistent. Since there is very limited housing and no commercial uses located within bike riding distance of the project site, the Project Applicant has committed to Project Design Features that require providing of onsite food vending facilities as well as providing charging stations for electric vehicles.
Provide on- and off-site safety improvements for bike, pedestrian, and transit connections, and/or implement relevant improvements identified in an applicable bicycle and/or pedestrian master plan.	Consistent. The Proposed Project will include pedestrian and bicycle pathways on site that connect to the offsite roads.
Require on-site renewable energy generation.	Consistent. The Proposed Project will be designed to meet Title 24 part 6 requirements that any industrial structure constructed be designed to be solar ready, which requires that all roofs be designed to structurally support solar PV panels as well as the installation of conduit from the main panel to the roof for future PV connections.
Prohibit wood-burning fireplaces in new development, and require replacement of wood-burning fireplaces for renovations over a certain size developments.	Not applicable. The Proposed Project would not include any wood-burning fireplaces.
Require cool roofs and "cool parking" that promotes cool surface treatment for new parking facilities as well as existing surface lots undergoing resurfacing.	Consistent. The Proposed Project will be designed to meet the CALGreen Building requirements that require installation of cool roofs and cool asphalt for parking.
Require solar-ready roofs	Consistent. The Proposed Project will be designed to meet the CALGreen Building requirements that require all new nonresidential structures to be designed with solar-ready roofs.
Require organic collection in new developments	Consistent. The Project Applicant will require the landscape contractor for the Proposed Project to collect and recycle green waste.
Require low-water landscaping in new developments. Require water efficient landscape maintenance to conserve water and reduce landscape waste.	Consistent. All new landscaping will be designed to meet the Title 24 part 11 requirements that require the use of drought-tolerant plants and water-efficient irrigation systems.
Achieve Zero Net Energy performance building standards prior to dates required by the Energy Code.	Consistent. All structures would be designed to exceed Title 24 part 6 building energy efficiency standards.
Encourage new construction including municipal building construction, to achieve third-party green building certifications, such as the GreenPoint Rated program, LEED rating system, or Living Building Challenge.	Not applicable. The Project would not include any municipal buildings.
Require the design of bike lanes to connect to the regional bicycle network.	Consistent. The Proposed Project would include onsite bikeways that connect to the offsite roads.

Table 4.6-5: Consistency with CARB's 2017 Scoping Plan Measures for Individual Projects

Measures from Scoping Plan	Project Consistency
Expand urban forestry and green infrastructure in new land development.	Consistent. The Proposed Project includes a Landscape Plan that would increase the number of trees on the project site.
Require preferential parking spaces for park and ride to incentive carpooling.	Consistent. The Proposed Project would be designed to meet the Title 24 Part 11 requirements that require dedicated spaces for carpools and clean air vehicles.
Require a transportation management plan for specific plans which establishes a numeric target for non-SOV travel and overall VMT	Consistent. Although the Traffic Impact Analysis prepared for the Proposed Project analyzed the overall VMT generated by the Proposed Project, which found that the project VMT impacts were less than significant.
Develop a rideshare program targeting commuters to major employment centers.	Not Applicable. The Proposed Project would not be considered a major employment center.
Require the design of bus stops/shelters/express lanes in new development to promote the usage of mass-transit.	Not Applicable. Currently no bus service is provided in the project vicinity, nor is any bus service planned for the project vicinity.
Require gas outlets in residential backyards for use with outdoor cooking appliances such as gas barbeques if natural gas service is available.	Not Applicable. No residential backyards would be a part of the Proposed Project.
Require the installation of electrical outlets on the exterior walls of both the front and back of residences to promote the use of electric landscape maintenance equipment	Not Applicable. No residential homes would be a part of the Proposed Project.
Require the design of the electric outlets and/or wiring in new residential unit garages to promote electric vehicle usage.	Not Applicable. No residential homes would be a part of the Proposed Project.
Require electric vehicle charging station and signage for non-residential developments.	Consistent. The Proposed Project will be designed to meet the Title 24 Part 11 requirements that require the installation electric vehicle charging stations.
Provide electric outlets to promote the use of electric landscape equipment to the extent feasible on parks and public/quasi-public lands.	Consistent. The Proposed Project will be designed to meet the CALGreen Building requirements that require installation of outdoor outlets on nonresidential structures.
Require each residential unit to be "solar ready," including installing the appropriate hardware and proper structural engineering.	Not Applicable. No residential homes would be a part of the Proposed Project.
Require the installation of energy conservation appliances such as on-demand tank-less water heaters and whole-house fans.	Not Applicable. These energy conservation appliances are for residential uses and would not operate efficiently in industrial buildings.
Require each residential and commercial building equip buildings with energy efficient AC units and heating systems with programmable thermostats/timers.	Consistent. The Proposed Project will be designed to meet the CALGreen Building requirements that require installation of programmable thermostats.
Require large-scale residential developments and commercial buildings to report energy use, and set specific targets for per-capita energy use.	Not Applicable. The Proposed Project consists of an industrial project, which is neither a residential nor a commercial use.

Table 4.6-5: Consistency with CARB's 2017 Scoping Plan Measures for Individual Projects

Measures from Scoping Plan	Project Consistency
Require each residential and commercial building to utilize low flow water fixtures such as low flow toilets and faucets.	Consistent. The Proposed Project will be designed to meet the CALGreen Building requirements that require installation of low-flow water fixtures.
Require the use of energy-efficient lighting for all street, parking, and area lighting	Consistent. The Proposed Project will be designed to meet the CALGreen Building requirements that require installation of energy-efficient lighting.
Require the landscaping design for parking lots to utilize tree cover and compost/mulch.	Consistent. All parking lots will be designed to meet County standards for tree coverage of parking lots.
Incorporate water retention in the design of parking lots and landscaping, including using compost/mulch.	Consistent. All parking lots and other improvements included in the Proposed Project will be required to meet the water-retention requirements detailed in the WQMP.
Require the development project to propose an off-site mitigation project which should generate carbon credits equivalent to the anticipated GHG emission reductions.	Not Applicable. The GHG emissions calculations for the Proposed Project that are provided above did not find an exceedance of the applicable GHG emissions thresholds; and, therefore, no offsite mitigation is needed or required.
Require the project to purchase carbon credits from the CAPCOA GHG Reduction Exchange Program, American Carbon Registry (ACR), Climate Action Reserve (CAR) or other similar carbon credit registry determined to be acceptable by the local air district.	Not Applicable. The GHG emissions calculations for the Proposed Project that are provided above did not find an exceedance of the applicable GHG emissions thresholds; and, therefore, no offsite mitigation is needed or required.
Encourage the applicant to consider generating or purchasing local and California-only carbon credits as the preferred mechanism to implement its off-site mitigation measure for GHG emissions and that will facilitate the State's efforts in achieving the GHG emission reduction goal.	Not Applicable. The GHG emissions calculations for the Proposed Project that are provided above did not find an exceedance of the applicable GHG emissions thresholds; and, therefore, no offsite mitigation is needed or required.

Source: CARB 2017
Notes: CAPCOA: California Air Pollution Control Officers Association; GHG: greenhouse gas; LEED: Leadership in Energy and Environmental Design; PV: photovoltaic; VMT: Vehicle Miles Traveled; WQMP: Water Quality Management Plan

As shown in Table 4.6-5, with implementation of the Project Design Features committed to by the project applicant and Statewide regulatory requirements including the CALGreen building standards, the Proposed Project would be consistent with all feasible mitigation measure for individual projects provided in the CARB's 2017 Scoping Plan. Therefore, implementation of the Proposed Project would not conflict with any applicable plan that reduces GHG emissions. Impacts would be less than significant.

4.6.6 Cumulative Impacts

Cumulative impacts are defined in CEQA as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Stated in another way, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing relating impacts" (CEQA Guidelines Section 15130 [a][1]).

California Air Pollution Control Officers Association's (CAPCOA's) CEQA and Climate Change Report states, "GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective" (CAPCOA 2008). Because the magnitude of global GHG emissions is extremely large when compared with the emissions of typical development projects, it is accepted as very unlikely that any individual development project would have GHG emissions of a magnitude to directly impact global climate change. As detailed above, the GHG emissions created from the Proposed Project would not exceed either the USEPA's 25,000-$MtCO_2e$ emissions threshold or ICAPCD Rule 903 20,000-$MtCO_2e$ emissions threshold and would be consistent with all applicable plans for reducing GHG emissions. Cumulative impacts would be less than significant.

4.6.7 Mitigation Measures

No mitigation measures are required, as all Project impacts regarding GHG emissions are less than significant.

4.6.8 Level of Significance After Mitigation

No mitigation measures are required; impacts related to GHG emissions would remain less than significant.