2.7 Greenhouse Gas Emissions

On July 25, 2018, the County Board of Supervisors approved entitlements for the Harmony Grove Village South (HGV South) Project (Project) and certified its Final Environmental Impact Report (FEIR) in accordance with the California Environmental Quality Act (CEQA). The accompanying 2018 greenhouse gas (GHG) analysis for the Project included the Final Greenhouse Gas Analyses Report (Helix Environmental, 2017d, as updated in 2018 Appendix J), which was augmented by the Global Climate Change Supplemental Letter prepared by Ldn Consulting, Inc. (2018), and included verification of the Project's on-site photovoltaic (PV; solar) panels by an independent third-party reviewer (ConSol 2017). The original GHG analysis (Appendix J of the EIR) incorporated a number of Project design features (PDFs) and calculated that the Proposed Project would generate a total of 4,411 unamortized Metric Tons (MT) carbon dioxide equivalents (CO_2e) from construction and 5,222 MT CO_2e during Project operations. The FEIR also recommended mitigation measures for GHG impacts to be considered less than significant. (As explained below those mitigation measures have been revised.)

Following County approval and certification, the Project approvals were challenged in two actions.[1] Following litigation, the California Court of Appeal (Court) found that environmental analyses within the Project's FEIR were adequate and complied with CEQA in all respects except for one.[2] The sole issue found to be non-compliant with CEQA was the Project's GHG mitigation measures during construction (M-GHG-1) and operational (M-GHG-2) periods because the measures lacked enforceability and resulted in an improper deferral of mitigation.

Moreover, the 2018 FEIR GHG analysis was found to have "adequately considered the cumulative effect of GHG emissions." (Judgment dated July 21, 2020; Minute Order dated February 20, 2020, section 1.a.). Elements included in the 2018 GHG analysis that were assessed as adequate during CEQA litigation included:

- GHG analysis (including approach and traffic generation information [average daily trips, vehicle miles traveled (VMT), and associated roadway effects])
- A three-year construction period, with duration of specific construction efforts and specified associated construction equipment
- Sequestration effects during construction and subsequent landscaping
- CEQA thresholds of significance (Net Zero GHG emissions taking into consideration GHG reduction measures)

Although the prior analysis was found to be legally adequate and sufficient in all respects but mitigation language, Subchapter 2.7, which included new text, was recirculated for ease of reader

[1] 37-2018-00042927-CU-TT-CTL and 37-2018-00043084-CU-TT-CTL (limited to consideration of the adequacy of the GHG Mitigation Measures).

[2] Elfin Forest Harmony Grove Town Council et al. v. County of San Diego and RCS, 37-2018-00042927, Court of Appeal, Fourth Appellate District (Division One), filed October 14, 2021.) See also Sierra Club v. County of San Diego and Integral Communities, LLC, et al., 37-2018-00043084-CU-TT-CTL, Court of Appeal, Fourth Appellate District (Division One), filed December 21, 2021.

review. The new text focuses on this introduction and background information regarding the Project's location, updates to legislation/regulation and methodology data as appropriate, or added PDFs as now proposed, discussion of infill screening analysis related to VMT, updated modeling, and a revised mitigation measure. Each change is shown in strike-out / underline.

This revised section updates the 2018 FEIR GHG section using California Emissions Estimator Model (CalEEMod), Version 2020.4.2, to estimate Project emissions. The 2020 version is similar to that used for the 2018 circulation, but focuses on updated emission factors. The conclusion as to CEQA significance (significant and mitigable) remains the same. Therefore, EIR Subchapter 2.7 modifications do not change related CEQA conclusions in other sections of the 2018 FEIR because GHG emissions from all Project sources would remain at net zero. As described in the 2018 FEIR all cumulative impacts associated with Project emissions would have been mitigated to net zero through on-site reductions and implementation of the Project's previous mitigation measures. Because the Project is again proposing to mitigate to net zero, the cumulative GHG emission impacts would be the same.

2.7.1 Existing Conditions

2.7.1.1 *Background*

Climate change refers to any substantial change in measures of climate (such as temperature, precipitation, or wind) lasting for decades or longer. The Earth's climate has changed many times during the planet's history, including events ranging from ice ages to long periods of warmth. Historically, natural factors such as volcanic eruptions, changes in the Earth's orbit, and the amount of energy released from the sun have affected the Earth's climate. Beginning late in the 18th century, human activities associated with the Industrial Revolution have changed the composition of the atmosphere. The Industrial Revolution resulted in an increase in the combustion of carbon-based fuels such as wood, coal, oil, natural gas, and biomass; and created emissions of substances that are not found in nature. This in turn has led to a marked increase in the emissions of gases that have been shown to influence the world's climate. These GHGs influence the amount of heat that is trapped in the Earth's atmosphere. Because climate change is caused by the collective of human actions taking place throughout the world, it is inherently a global or cumulative issue.

GHGs are gases that trap heat in the atmosphere, analogous to the way a greenhouse retains heat. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs, such as HFC-23), fluorocarbons or perfluorocarbons (PFCs, such as CF_4), and sulfur hexafluoride (SF_6). The accumulation of GHGs in the atmosphere regulates the Earth's temperature. The potential of a gas to trap heat and warm the atmosphere is measured by its global warming potential (GWP). GHGs either break down or are absorbed over time. Thus, the potential of a gas to contribute to global warming is limited by the time it is in the atmosphere, or its "atmospheric lifetime." To account for these effects, GWPs are calculated over a 100-year time horizon (U.S. Environmental Protection Agency [USEPA] 2014b). Because of its relative abundance in the atmosphere and its relatively long atmospheric lifetime, CO_2 has been designated the reference gas for comparing GWPs. Thus, the 100-year GWP of CO_2 is equal to one (see Table 2.7-1, *Global Warming Potentials and Atmospheric Lifetimes of Common GHGs*).

Specific to the site, the Project consists of 453 dwelling units; approximately 5,000 s.f. of commercial/civic uses; 2 miles of multi-use trails; 35 acres of biological open space; 36 acres of common area; and 4 acres of parks. The Project is more particularly located within walking distance from Harmony Grove Village, an existing village that has 742 built homes, an equestrian center, and other village-supporting commercial and recreational uses, a portion of which is directly across the street from HGV South. The Project is also within a 2–mile radius of a concentration of urban and mixed land uses that include Palomar Hospital, Stone Brewing, numerous "big box" retail stores with surrounding retail, apartment complexes, mobile home parks, and a large-scale automobile mall. An expansive light-industrial/commercial employment center (Escondido Research and Technology Center; ERTC) and a confluence of regional transportation connectors (Interstate 15 [I-15] and State Route 78 [SR-78]) are located within approximately 2.5 miles of the Project site (see Figure 2.7-1 at the end of this section). Beyond this are California State University San Marcos and Kaiser Permanente San Marcos, as well as other business uses.

The site's 111 acres are currently zoned A70 (Limited Agriculture) and RR (Rural Residential), which allows for agricultural, open space, and large lot rural residential uses. The site is identified as Semi-Rural Regional Category, with designations of Semi-Rural Residential (SR-0.5; 110.5 acres) and Rural Lands (RL-20; 0.5 acre).

2.7.1.2 *Types of GHGs*

California Health and Safety Code Section 38505(g) defines GHGs to include the following compounds: CO_2, CH_4, N_2O, chlorofluorocarbons (CFCs), HFCs, and SF_6. Descriptions of these compounds and their sources are provided below.

Carbon dioxide is an odorless, colorless GHG. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic (human-caused) sources of CO_2 include the burning of fuels such as coal, oil, natural gas and wood. As of December 2014, global concentrations of CO_2 exceeded 399 parts per million (ppm) (National Oceanic and Atmospheric Administration [NOAA] 2015). Some scientific estimates predict that concentrations may increase to 1,130 CO_2 equivalent (CO_2e) ppm by 2100 as a direct result of anthropogenic sources, and that this would result in an average global temperature rise of at least 7.2 degrees Fahrenheit (Intergovernmental Panel on Climate Change [IPCC] 2007).

Methane (CH_4) is a gas and is the main component of natural gas used in homes. It has a GWP of about 21, or 21 times the GWP of CO_2. A natural source of CH_4 is from the decay of organic matter. Geological deposits known as natural gas fields contain CH_4, which is extracted for fuel. Other sources are from decay of organic material in landfills, fermentation of manure, and cattle digestion.

Nitrous oxide (N_2O), also known as laughing gas, is a colorless gas and has a GWP of about 310. N_2O is produced by microbial processes in soil and water, including reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (e.g., nylon and nitric acid production) also emit N_2O. It is used in rocket engines, as an aerosol spray propellant, and in racecars. During combustion, NO_X (NO_X is a generic term for mono

nitrogen oxides such as NO and NO_2) is produced as a criteria pollutant and is not the same as N_2O. Very small quantities of N_2O may be formed during fuel combustion by nitrogen and oxygen.

Fluorocarbons are gases formed synthetically by replacing all hydrogen atoms in CH_4 or ethane with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically nonreactive in the troposphere (the level of air at Earth's surface).

Chlorofluorocarbons were first synthesized in 1928 for use as refrigerants, aerosol propellants and cleaning solvents. They destroy stratospheric ozone; therefore, their production was stopped by requirements of the Montreal Protocol. Fluorocarbons have a GWP of between 140 and 11,700.

SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It has the highest GWP of any gas (23,900). SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Ozone is a GHG that is unlike the other GHGs as it is relatively short-lived in the troposphere and, therefore, is not global in nature. According to the California Air Resources Board (CARB), it is difficult to make an accurate determination of the contribution of ozone precursors (NO_X and VOCs) to global warming (CARB 2006).

A summary of the most common naturally occurring and artificial GHGs is provided in Table 2.7-1. Of the gases listed in Table 2.7-1, CO_2, CH_4 and N_2O, are produced by both natural and anthropogenic (human) sources. The remaining gases, HFCs, chlorofluorides (CFs), and SF_6, are the result of solely human processes.

2.7.1.3 *Regulatory Setting*

All levels of government have some responsibility for the protection of air quality, and each level (federal, state, and regional/local) has specific responsibilities relating to air quality regulation. GHG emissions and the regulation of GHGs is a relatively new component of air quality. In addition to regulations, several executive orders have been identified below. As executive orders lack legislative action, they are not fully enforceable as regulations and are included for informational purposes.

Federal

Federal Clean Air Act

The U.S. Supreme Court ruled in April 2007, in *Massachusetts v. U.S. Environmental Protection Agency*, that CO_2 is an air pollutant, as defined under the Clean Air Act (CAA), and that the USEPA has the authority to regulate emissions of GHGs. The USEPA announced that GHGs (including CO_2, CH_4, N_2O, HFC, PFC and SF_6) threaten the public health and welfare of the American people. This action was a prerequisite to finalizing the USEPA's proposed GHG emissions standards for light-duty vehicles, which were jointly proposed by the USEPA and the United States Department of Transportation's National Highway Traffic Safety Administration in September 2009.

Corporate Average Fuel Economy Standards

The federal Corporate Average Fuel Economy (CAFE) standard determines the fuel efficiency of certain vehicle classes in the U.S. In 2007, as part of the Energy and Security Act of 2007, CAFE standards were increased for new light-duty vehicles to 35 miles per gallon (mpg) by 2020. In May 2009, President Obama announced plans to increase CAFE standards to require light-duty vehicles to meet an average fuel economy of 35.5 mpg by 2016. Rulemaking to adopt these new standards was completed in 2010. California agreed to allow automakers who show compliance with the national program to also be deemed in compliance with state requirements. The federal government issued new standards in summer 2012 for model years 2017–2025, requiring a fleet average in 2025 of 54.5 mpg.

In May 2022, the National Highway Traffic Safety Administration (NHTSA) published rules finalizing revised fuel economy standards for passenger cars and light trucks for 2024/2025, and the standards increase at a rate of eight percent per year. Then in 2026 an increase in the efficiency standard by 10 percent would be required. NHTSA estimates that the industry fleetwide average will be 49 miles per gallon (MPG) in 2026 (NHTSA 2022).

In July 2023, NHTSA proposed new CAFE standards for passenger cars and light trucks built in model years 2027 through 2032, and new fuel efficiency standards for heavy-duty pickup trucks and vans built in model years 2030 through 2035. If finalized, the proposal would require an industry fleet-wide average of approximately 58 miles per gallon for passenger cars and light trucks in model year 2032, by increasing fuel economy by two percent year over year for passenger cars and by four percent year over year for light trucks (NHTSA 2023).

State

California Code of Regulations, Title 24, Part 6

California Code of Regulations, Title 24, Part 6, California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first established in 1978 in response to a legislative mandate to reduce California's energy consumption. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions.

The Title 24 standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Building Energy Efficiency Standards updates effective in 2017 focused on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The most significant efficiency improvements to the residential Standards include improvements for attics, walls, water heating, and lighting. The Standards are divided into three basic sets. First, there is a basic set of mandatory requirements that apply to all buildings. Second, there is a set of performance standards—the energy budgets—that vary by climate zone (of which there are 16 in California) and building type; thus, the Standards are tailored to local conditions. Finally, the third set constitutes an alternative to the performance standards, which is a set of prescriptive packages that are basically a recipe or a checklist compliance approach.

The current code requirement is based on the 2022 standards, which went into effect on January 1, 2023. These standards have mandatory requirements to reduce building envelope air leakage, improve roofing through Solar Reflectance and Thermal Emittance, improve on insulation, improve on space conditioning, water heating and plumbing, and improve on lighting efficiency requirements, to name a few. The Project will be required to implement Title 24 2022 or the code cycle relevant at the time of building permit issuance.

There are no federal, state, or local laws or policies that would require an existing commercial building to install solar panels as described in Section 2.7.5 M-GHG-1 below. Solar PV and energy storage systems will be required on certain newly constructed commercial buildings with the update to Title 24, Part 6: Building Energy Efficiency Standards (the Energy Code; effective January 1, 2023). Existing commercial buildings that fall within the requirements of Title 24 Part 6 may also be required to install solar panels (those that require building permits for qualified work such as modifications, reconstruction, or alteration work). Minor renovations are not subject to such rules, and there are a number of exceptions that can still apply to exempt existing buildings from such requirements. Similarly, proposed Energy Goal E-2.2 of the County's Draft Climate Action Plan (CAP) applies only to existing buildings with "qualifying improvements."

California Code of Regulations, Title 24, Part 11 (CALGreen)

The California Green Building Standards Code (CALGreen Code; 24 CCR, Part 11) is a code with mandatory requirements for new residential and nonresidential buildings (including buildings for retail, office, public schools, and hospitals) throughout California. The code is Part 11 of the California Building Code in Title 24 of the CCR (CBC 2016). The 2016 standards for new construction of, and additions and alterations to, residential and nonresidential buildings went into effect on January 1, 2017.

The development of the CALGreen Code is intended to: (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction.

The CALGreen Code contains requirements for 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 allowing 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 the verification that all building systems, like heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

CALGreen Standards were updated most recently in 2022 and became effective on January 1, 2023. The updated Code includes modifications to current codes and is currently a requirement for this Project. Mandatory requirements include many updated Electric Vehicle Charging requirements for multi- and single-family developments (California Title 24, Part 11, 2022).

Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Schwarzenegger in June 2005, calls for a reduction in GHG emissions to year 1990 levels by the year 2020, and for an 80 percent reduction in GHG emissions by the year 2050. EO S-3-05 also calls for the California Environmental Protection Agency (CalEPA) to prepare biennial science reports on the potential impact of continued global warming on certain sectors of the California economy. The first of these reports, "*Scenarios of Climate Change in California: An Overview*" (California Climate Change Center 2006), concluded that, under the report's emissions scenarios, the impacts of global warming in California are anticipated to include, but not be limited to: public health, biology, rising sea levels, hydrology and water quality, and water supply. CARB's Second Update to the Scoping Plan (as adopted in December 2017) seeks to have 1.5 million ZEVs on California's roadways in 2025 and 5 million ZEVs by 2030 (Office of Governor Edmund G. Brown Jr., 2018), while accelerating the deployment of alternative fueling infrastructure. Please also see discussion of EO-B-55-18, below.

Assembly Bill 32

The California Global Warming Solutions Act of 2006, widely known as Assembly Bill (AB) 32, requires CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

Executive Order B-30-15

On April 29, 2015, EO B-30-15 established a California GHG interim reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG reduction targets with those of leading international governments, including the 28-nation European Union. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal established by EO S-3-05 of reducing emissions 80 percent under 1990 levels by 2050. To facilitate achievement of this goal, EO B-30-15 calls for an update to CARB's Scoping Plan to express the 2030 target in terms of MMT CO_2e.

Senate Bill 32

In September 2016, the Governor signed SB 32 (Pavley; California Global Warming Solutions Act of 2006: emissions limit) into law. SB 32 would require that CARB ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030, thereby codifying the attainment of the 2030 reduction goal identified in EOs B-30-15 and S-3-05. CARB was directed to update the Scoping Plan to reflect the 2030 target. However, currently there are no proposed or adopted significance thresholds for analyzing post-2020 emissions for development projects in California, there are no adopted statewide or local plans to reduce emissions 40 percent below 1990 levels by 2030, and the regulatory framework to achieve the 2030 target is still being developed.

Executive Order B-55-18

In 2018, the Governor expanded upon EO S-3-05 by issuing Executive Order B-55-18 and creating a statewide goal of carbon neutrality by 2045. EO B-55-18 identifies CARB as the lead agency to

develop a framework for implementation and progress tracking toward this goal. It should be noted that consistency with a statewide carbon neutrality target by 2045 represents the Governor's policy goal but is not required to make a significance determination. The state has already determined that 80 percent below 1990 levels by 2050 is a long-term target that represents California's share of emissions reductions to stabilize and limit global warming and "avoid dangerous climate change." EO B-30-15 sets forth the 2050 target endorsed by the Intergovernmental Panel on Climate Change's finding and notes that the state's 2050 target will "attain a level of emissions necessary to avoid dangerous climate change" because it may limit global warming to 2 degrees Celsius by 2050.

Assembly Bill 1279

In 2022, Governor Newsom approved AB 1279, which requires the state board to prepare and approve a scoping plan for achieving the maximum technologically feasible and cost-effective reductions in GHG emissions and to update the scoping plan at least once every five years. This bill, the California Climate Crisis Act, would declare the policy of the state both to achieve net zero GHG emissions as soon as possible (but no later than 2045), achieve and maintain net negative GHG emissions thereafter, and ensure that by 2045, statewide anthropogenic GHG emissions are reduced to at least 85 percent below the 1990 levels.

Assembly Bill 197

A condition of approval for SB 32 was the passage of AB 197. AB 197 requires that CARB consider the social costs of GHG emissions and prioritize direct reductions in GHG emissions at mobile sources and large stationary sources. AB 197 also gives the California legislature more oversight over CARB through the addition of two legislatively appointed members to the CARB Board and the establishment a legislative committee to make recommendations about CARB programs to the legislature.

Assembly Bill 1236

AB 1236 (2015), as enacted in California's Planning and Zoning Law, requires local land use jurisdictions to approve applications for the installation of electric vehicle (EV) charging stations, as defined, through the issuance of specified permits unless there is substantial evidence in the record that the proposed installation would have a specific, adverse impact upon the public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact. The bill requires local land use jurisdictions with a population of 200,000 or more residents to adopt an ordinance, by September 30, 2016, that creates an expedited and streamlined permitting process for EV charging stations, as specified. In August 2016, the County Board of Supervisors adopted Ordinance No. 10437, adding a section to its County Code related to the expedited processing of EV charging station permits consistent with AB 1236.

Senate Bill 350

SB 350 (2015) further expanded the Renewables Portfolio Standard (RPS; see also Senate Bill 1078 below) by establishing that 50 percent of the total electricity sold to retail customers in California per year by December 31, 2030 be secured from qualifying renewable energy sources. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and

natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency.

Executive Order B-16-12

EO B-16-12 (March 2012) directs state entities under the Governor's direction and control to support and facilitate development and distribution of ZEVs. This EO also sets a long-term target of reaching 1.5 million zero-emission vehicles (ZEVs) on California's roadways by 2025. On a statewide basis, EO B-16-12 also establishes a GHG emissions reduction target from the transportation sector equaling 80 percent less than 1990 levels by 2050. In furtherance of this EO, the Governor convened an Interagency Working Group on Zero-Emission Vehicles that has published multiple reports regarding the progress made on the penetration of ZEVs in the statewide vehicle fleet. As of January 2018, the Governor had called for as many as 1.5 million EV by 2025 and up to 5 million EV by 2030 (Office of Governor Edmund G. Brown Jr., 2018).

Executive Order N-79-20

Governor Gavin Newsom signed EO N-79-20 in 2020. It requires that 100 percent of new car sales in California be ZEVs by 2035. The plan targets 35 percent ZEV sales by 2026, 68 percent by 2030, and 100 percent by 2035 (CARB 2023).[3] The electrification of California's transportation sector is recognized by CARB and other state, regional, and local agencies as critical to meeting state 2030 and 2050 GHG emission reduction targets.

Assembly Bill 75

AB 75 was passed in 1999 and mandates state agencies to develop and implement an integrated waste management plan to reduce GHG emissions related to solid waste disposal and diversion (recycling). In addition, the bill mandates that community service districts providing solid waste services report the disposal and diversion information to the appropriate city, county, or regional jurisdiction. Since 2004, the bill requires diversion of at least 50 percent of the solid waste from landfills and transformation facilities, and submission to the California Integrated Waste Management Board of an annual report describing the diversion rates.

Assembly Bill 341

The state legislature enacted AB 341 (California Public Resource Code Section 42649.2), increasing the diversion target to 75 percent statewide. AB 341 requires all businesses and public entities that generate 4 cubic yards or more of waste per week to have a recycling program in place. In addition, multi-family apartments with five or more units are also required to implement a recycling program. The final regulation was approved by the Office of Administrative Law (OAL) on May 7, 2012, and went into effect on July 1, 2012.

[3] New ZEV sales in California met the 1.5 million goal in the first quarter of 2023, which exceeds the state's goals set for 2025 (CEC 2023).

Assembly Bill 1493

AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State." On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bound California's enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. The amendments also prepare California to merge its rules with the federal CAFE rules for passenger vehicles. In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of ZEVs into a single group of standards called Advanced Clean Cars (ACC).

The ZEV program acts as the focused technology of the ACC program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles (PHEVs) in the 2018 to 2025 model years (CARB 2017).

This program was recently updated and is known as the ACC II Program. ACC II regulations will rapidly scale down emissions of light-duty passenger cars, pickup trucks and SUVs starting with the 2026 model year through 2035. The regulations are two-pronged. First, it amended the ZEV Regulation to require an increasing number of ZEVs, and relies on currently available advanced vehicle technologies, including battery-electric, hydrogen fuel cell electric and PHEVs, to meet air quality and climate change emissions standards. Second, the Low-emission Vehicle Regulations were amended to include increasingly stringent standards for gasoline cars and heavier passenger trucks to continue to reduce smog-forming emissions (CARB 2023).

Executive Orders B-48-18 and N-79-20

In January of 2018, EO B-48-18 was signed to "boost the supply of ZEVs and charging and refueling stations in California." The EO directs state government to meet a series of milestones toward targets of 1.5 million ZEVs on California's roadways by 2025 and 5 million by 2030 (Governor of California 2018); and should be significantly higher in 2035 and beyond due to EO N-79-20 and ACC II. Based on these estimates the total percentage of EVs expected in California would be 14.4 percent or 11 percent over what EMFAC estimates for the year 2030.

Senate Bill 97

SB 97 required the Office of Planning and Research (OPR) to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA; including but not limited to, effects associated with transportation or energy consumption. The Resources Agency certified and adopted the guidelines in December 2009. The CEQA Guidelines provide the lead agency with broad discretion in determining what methodology is used in assessing the impacts of GHG emissions in the context of a particular project. The OPR guidance also states that the lead agency can rely on qualitative or other performance-based standards for estimating the significance of GHG emissions, although the CEQA Guidelines did not establish a threshold of significance.

Senate Bill 375

SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPOs) such as the San Diego Association of Governments (SANDAG) are required to adopt a Sustainable Communities Strategy, within the Regional Transportation Plan (RTP), the goal of which is to establish a development plan for the region, which, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets.

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

Qualified projects consistent with an approved Sustainable Communities Strategy or Alternative Planning Strategy categorized as "transit priority projects" would receive incentives to streamline CEQA processing.

In 2018, CARB updated the SB 375 targets. For purposes of SANDAG, the updated targets include a 15 percent reduction in emissions per capita by 2020 and a 19 percent reduction by 2035.

Executive Order S-1-07

EO S-1-07, signed by Governor Schwarzenegger January 2007, directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to AB 32. CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010. Although challenged in 2011, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause in September 2013. CARB is therefore continuing to implement the LCFS statewide.

The latest amendment to LCFS implementation regulations was in 2018 via CARB approved amendments which included strengthening and smoothing the carbon intensity benchmarks through 2030 in line with California's 2030 GHG emission reduction target enacted through SB 32 (CARB 2018). CARB is currently considering new amendments. These have gone through the public review process, although it is currently unknown when new standards will be adopted.

Senate Bill 1078

SB 1078 (2002) established the RPS program, which requires an annual increase in renewable generation by the utilities equivalent to at least 1 percent of sales, with an aggregate goal of 20 percent by 2017. This goal was subsequently accelerated by the 2003 Energy Action Plan I and required utilities to obtain 20 percent of their power from renewable sources by 2010.

Senate Bill X1 2

SB X1 2 (2011) expanded the RPS by establishing that 20 percent of the total electricity sold to retail customers in California per year by December 31, 2013, and 33 percent by December 31, 2020, and in subsequent years be secured from qualifying renewable energy sources. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers previously covered by the RPS, SB X1 2 added local, publicly owned electric utilities to the RPS.

SB 100

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

California Air Resources Board: Scoping Plan

On December 11, 2008, CARB adopted the Scoping Plan (CARB 2008) as directed by AB 32. The Scoping Plan proposes a set of actions designed to reduce overall GHG emissions in California to the levels required by AB 32. Measures applicable to development projects include those related to energy-efficiency building and appliance standards, the use of renewable sources for electricity generation, regional transportation targets, and green building strategy. Relative to transportation, the Scoping Plan includes nine measures or recommended actions related to reducing vehicle miles traveled and vehicle GHGs through fuel and efficiency measures. These measures would be implemented statewide rather than on a project-by-project basis.

The CARB released the First Update to the Climate Change Scoping Plan in May 2014 to provide information on the development of measure-specific regulations and to adjust projections in consideration of the economic recession (CARB 2014a). To determine the amount of GHG emission reductions needed to achieve the goal of AB 32 (i.e., 1990 levels by 2020) CARB developed a forecast of the AB 32 Baseline 2020 emissions, which is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. CARB estimated the AB 32 Baseline 2020 to be 509 MMT CO_2e. The Scoping Plan's current estimate of the necessary GHG emission reductions is 78 MMT CO_2e (CARB 2014b). This represents an approximately 15.32 percent reduction. CARB is forecasting that this would be achieved through the following reductions by sector: 25 MMT CO_2e for energy; 23 MMT CO_2e for transportation; 5 MMT CO_2e for high-GWP GHGs, and 2 MMT CO_2e for waste. The remaining 23 MMT CO_2e would be achieved through Cap-and-Trade Program reductions. This reduction is flexible; if CARB receives new information and changes the other

sectors' reductions to be less than expected, the agency can increase the Cap-and-Trade reduction (and vice versa).

In response to EO B-30-15 and SB 32, all state agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. CARB was directed to update the Scoping Plan to reflect the 2030 target, and moved forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue driving down emissions. CARB completed a second update to the Scoping Plan to reflect the 2030 target set by EO B-30-15 and codified by SB 32. The 2017 Climate Change Scoping Plan Update, Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target, was released in draft form in January 2017, a draft proposed Final was released in November 2017 and the final version was adopted in December 2017.

In 2022 California released the latest Scoping Plan update which lays out the sector-by-sector roadmap for California to achieve carbon neutrality by 2045. This plan, addressing recent legislation and direction from Governor Newsom, extends and expands upon these earlier plans with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045 (CARB 2022). The plan suggests that bold steps are required by the state and calls for the need of vast research and development with respect to methods of capturing CO_2. The plan calls for unprecedented and aggressive reductions in the need for fossil fuels by moving to zero emission transportation, electrifying the cars, buses, trucks and trains. The plan relies on external controls and requires partnership and collaboration with the federal government, other U.S. states, and other jurisdictions around the world for California to succeed in achieving its climate targets.

The latest Scoping Plan calls on Lead Agencies to explore options including funding or implementing local, off-site direct GHG reduction strategies after first maximizing on-site feasible design features to reduce emissions. Examples include building retrofit programs that install solar panels on existing buildings and other measures to reduce residual GHG emissions. These off-site mitigation measures are viable under CEQA, provided they are not required by law or regulation and would not have occurred but for the mitigation requirement (Section 4.1.2. of Appendix "D" of the CARB 2022 Scoping Plan). These off-site mitigation measures should only be considered after feasible on-site options have been exhausted.

Local

San Diego Gas & Electric

California allows customers to install renewable electrical generation facilities primarily to offset the customers' electrical needs, and to interconnect these facilities with the electrical grid. The CPUC has created rules (or "tariffs") under which investor-owned utilities must allow customers who generate their own energy to both serve their on-site energy needs and also to receive credit for any surplus energy fed back to their utility. This concept is referred to as Net Energy Metering (NEM).

When solar panels are installed at homes or businesses, SDG&E has a NEM program consistent with CPUC guidelines. If an SDG&E customer has an electricity generation system that uses a

renewable energy source and produces more energy than the SDG&E customer uses, they can earn bill credits for excess power that flows from their system to SDG&E's electricity grid (SDG&E 2023).

In accordance with SB 100, SDG&E is required to achieve an RPS of 60 percent by 2030, which is expected to be the first full year of Project operations. Whenever renewable energy is added to the grid, carbon-based fuel usage intensities are avoided as carbon-based sources are not utilized. When a home or business adds solar panels, the generated solar electricity displaces the need for electricity from non-renewable sources. Solar energy cannot offset other renewable energy sources since both are already carbon neutral. Instead, it directly reduces the demand for fossil fuel-generated electricity, which has higher GHG emissions. A realistic and defensible non-renewable offset could assume offset of 970 lb/MWh in GHGs for solar.[4] Since 805.02 lb/MWh was utilized, however, this analysis is conservative.

San Diego County

General Plan

The San Diego County 2011 General Plan includes a plan to balance population growth and development with infrastructure needs and resource protection. The current General Plan is based on smart growth and land planning principles that will reduce vehicle miles traveled (VMT), and thus result in a reduction of GHGs. This will be accomplished by locating future development within and near existing infrastructure. The General Plan includes a number of policies in the Conservation Element that encourage the design of new buildings that incorporate principles of sustainability and reduce vehicle and utility usage.

Climate Action Plan

The 2011 County General Plan EIR outlined a specific mitigation measure (Mitigation Measure CC-1.2) that called for the preparation of a CAP. The County developed and adopted a CAP in 2012 to address the issue of climate change as it relates to growth in the County, and to protect the environment for visitors and residents alike (County 2012a). After the CAP was adopted by the County, a lawsuit was filed by the Sierra Club in April 2013 and the San Diego County Superior Court set aside the approval of that County CAP.

In February 2018, the County's Board of Supervisors adopted a CAP to serve as a long-term programmatic plan that identifies strategies and measures to meet the County's targets to reduce GHG emissions by 2020 and 2030, consistent with the state's legislative GHG reduction targets. In March 2018, several petitioners filed a lawsuit against the County. In December 2018, the San Diego County Superior Court issued a writ ordering the approval of the CAP and its Supplemental EIR (SEIR) to be set aside. In January 2019, the County appealed the San Diego County Superior

[4] Per the *Global Climate Change* Report, data from CalEEMod models starting in version 2016.3.2 estimate a 2009 GHG intensity of 720.49 lb/MWh which include an RPS of 10.5 percent (CPUC 2016). Taking the composite 720.49 lb/MWH reported in 2009 and removing renewable sources and relying only on carbon-based sources yields a calculated intensity of 805.02 lb/MWh (720.49 lb/MWh / 89.5 percent non-renewable sources). This means that whenever SDG&E requires carbon-based fuel energy generation, a GHG intensity of 805.02 lb/MWh would be expected. The 805.02 lb/MWh estimate would be a conservative estimate since according to the U.S. Energy Information Administration (EIA 2023), natural gas-powered electrical generation is 0.97 lb/kWh (970 lb/MWh).

Court's ruling, but the Fourth District Court of Appeal, Division One (Case No. D064243) upheld the trial Superior Court's ruling.

In September 2020, the County Board of Supervisors voted to rescind the CAP and related actions because the SEIR was found to be out of compliance with the CEQA. An updated CAP (CAP Update) was subsequently prepared to revise the 2018 CAP and correct the items identified by the Court within the SEIR that were not compliant. The Draft CAP Update was considered by the Planning Commission on June 14, 2024 for their recommendation for adoption by the Board of Supervisors by Fall 2024.

Accordingly, there is no approved CAP or applicable plan for reducing GHG emissions in the County. The current GHG analysis does not tier from the CAP; however, it is consistent with and does not conflict with relevant proposed GHG reducing measures of the Draft CAP Update. The Project would achieve no net increase in GHG emissions (i.e., carbon neutrality) over existing baseline conditions (which are assumed to be zero) with the implementation of the Project's recommended design features and mitigation measures.

Green Building Incentive Program

The County has a Green Building Incentive Program designed to promote the use of resource efficient construction materials, water conservation and energy efficiency in new and remodeled residential and commercial buildings. The program offers incentives of reduced plan check turnaround time and a 7.5-percent reduction in plan check and building permit fees for projects meeting minimum program requirements, which include options for natural resource conservation, water conservation, and energy conservation.

Construction and Demolition Recycling Ordinance

The County has a construction and demolition recycling ordinance that is designed to divert debris from construction and demolition projects away from landfill disposal in the unincorporated County of San Diego. The ordinance requires that 90 percent of inerts and 70 percent of all other materials from a project be recycled. In order to comply with the ordinance, applicants must submit a Construction and Demolition Debris Management Plan and a fully refundable Performance Guarantee prior to building permit issuance.

San Diego Association of Governments: San Diego Forward: The Regional Plan

The Regional Plan (SANDAG 2015) is the long-range planning document developed to address the region's housing, economic, transportation, environmental, and overall quality-of-life needs. The Regional Plan establishes a planning framework and implementation actions that increase the region's sustainability and encourage "smart growth while preserving natural resources and limiting urban sprawl." The Regional Plan encourages the regions and the County to increase residential and employment concentrations in areas with the best existing and future transit connections, and to preserve important open spaces. In December 2015, CARB, by resolution, accepted SANDAG's GHG emissions quantification analysis and determination that, if implemented, the SCS would achieve CARB's 2020 and 2035 GHG emissions reduction targets for the region.

The focus is on implementation of basic smart growth principles designed to strengthen the integration of land use and transportation.

At the core of the Regional Plan is a Sustainable Communities Strategy that charts a course towards lowering GHG emissions and includes the following five building blocks:

- A land use pattern that accommodates our region's future employment and housing needs, and protects sensitive habitats, cultural resources, and resource areas.

- A transportation network of public transit, Managed Lanes and highways, local streets, bikeways, and walkways built and maintained with reasonably expected funding.

- Managing demands on our transportation system (also known as Transportation Demand Management, or TDM) in ways that reduce or eliminate traffic congestion during peak periods of demand.

- Managing our transportation system (also known as Transportation System Management, or TSM) through measures that maximize the overall efficiency of the transportation network.

- Innovative pricing policies and other measures designed to reduce the number of miles people travel in their vehicles, as well as traffic congestion during peak periods of demand.

The Regional Plan includes the following set of principles that will guide the development of the region's future transportation network:

- The SANDAG investment plan will be built with financial resources that are reasonably expected to be available between now and 2050.

- A more efficient transportation network will be achieved through two key strategies: effectively managing the overall system (TSM) and effectively managing demands on the system (TDM) with innovative technologies be integrated into both. The result will be maximized efficiency in the transportation network, which ultimately can lower GHG emissions.

- Managing parts of the network, such as adding Managed Lanes and transit only lanes on freeways, which encourage people to carpool and use public transit to bypass bottlenecks.

- The road toward a more sustainable San Diego region should include vehicles that use cleaner, alternative sources of energy with SANDAG playing an important role in promoting this transition.

SANDAG approved the 2021 Regional Plan in December 2021 that continues to emphasize the key strategies in the first SCS that support a more sustainable future for the San Diego region. The Plan provides a big picture vision for how the San Diego region will grow through 2050 and beyond with an implementation program to help make the plan a reality. Within the Draft Plan, SANDAG introduced a transformative vision for transportation in San Diego County that

completely reimagines how people and goods could move throughout the region in the 21st century. The plan outlines the "5 Big Moves" which are: Complete Corridors, Transit Leap, Mobility Hubs, Flexible Fleets, and the Next Operating System. This plan is the region's long-term plan which will be implemented incrementally through the Regional Transportation Improvement Program (RTIP; SANDAG 2021).

2.7.1.4 *Existing Greenhouse Gas Emission Levels*

Worldwide and National GHG Inventory

The IPCC has concluded that a stabilization of GHGs at 400 to 450 ppm CO_2e concentration is required to keep global mean warming below 3.6ºF, which is assumed to be necessary to avoid dangerous climate change (Association of Environmental Professionals [AEP] 2007).

In the year 2012, total GHG emissions worldwide were estimated at 44,816 MMT of CO_2e emissions (World Resources Institute 2017). The United States contributed the second largest portion of GHG emissions (behind China), at 14 percent of global emissions. The total GHG emissions from the United States were 6,673 MMT CO_2e in 2013 (USEPA 2015). On a national level, approximately 27 percent of GHG emissions were associated with transportation and about 31 percent were associated with electricity generation.

State and Regional GHG Inventory

CARB performs statewide GHG inventories. The inventory is divided into six broad sectors; agriculture and forestry, commercial, electricity generation, industrial, residential, and transportation. Emissions are quantified in MMT CO_2e. Statewide GHG source emissions totaled 433 MMT CO_2e in 1990, 469 MMT CO_2e in 2000, 456 MMT CO_2e in 2010, and 459 MMT CO_2e in 2013. According to data from CARB, it appears that statewide GHG emissions peaked in 2004 (CARB 2014c). Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

According to the San Diego County GHG Inventory that was prepared by the School of Law Energy Policy Initiative Center (EPIC) at the University of San Diego in 2013, San Diego County emitted 33 MMT CO_2e in 2010. The largest contributor of GHG in San Diego County was the on road transportation category, which comprised 43 percent (14 MMT CO_2e) of the total amount. The second highest contributor was the electricity category, which contributed 8 MMT CO_2e, or 25 percent of the total. Together the on-road transportation and electricity categories comprised 68 percent of the total GHG emissions for the County. The remaining amount was contributed by natural gas consumption, civil aviation, industrial processes, off-road equipment, waste, agriculture, rail, water-borne navigation, and other fuels.

On-Site GHG Inventory

The Proposed Project site is currently vacant; in this state, the Project site is not a significant source of GHG emissions. Natural vegetation and soils temporarily store carbon as part of the terrestrial carbon cycle. Carbon is assimilated into plants as they grow, and then dispersed back into the environment when they die. Soil carbon accumulates from inputs of plants, roots, and other living components of the soil ecosystem (i.e., bacteria, worms, etc.). Soil carbon is lost through biological

respiration, erosion, and other forms of disturbance. Existing GHG emissions are considered negligible. For the purpose of establishing the existing environmental conditions on the Project site, GHG emissions on the Project site are conservatively assumed to be zero.

2.7.2 Analysis of Project Effects and Determination as to Significance

2.7.2.1 *Guidelines for the Determination of Significance and Guideline Source*

The assessment of climate change impacts is by its nature a cumulative impact, as no individual project has the ability to affect the climate on a global scale. Based on Appendix G.VII of the State CEQA Guidelines, a project would have a significant environmental impact if it would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment or

2. Conflict with an applicable plan, policy, or regulation that was adopted for the purpose of reducing the emissions GHGs.

The County General Plan, adopted in 2011, required that a CAP be adopted by the County and thereafter GHG guidelines. However, as stated above, currently there is no approved CAP or applicable plan for reducing GHG emissions in the County. Nor, as of the time of preparation of this analysis, has the County adopted GHG guidelines for general use as part of its environmental review process.

The County General Plan does not contain policies prohibiting the County from adopting a non-CAP-based threshold prior to adoption of a court-approved CAP. Furthermore, CARB in its 2022 Scoping Plan for Achieving Carbon Neutrality, states that local governments can consider discretionary approvals and entitlements for individual projects through the CEQA process absent an adequate CAP by implementing all feasible measures to reduce GHG emissions (see page 270 of CARB's 2022 Scoping Plan).

This analysis is consistent with CEQA Guidelines 15064.4, and appropriately relies upon a threshold based on the exercise of careful judgement and believed to be appropriate in the context of this particular Project: net zero GHG emissions. CEQA provides that the determination of whether or not a project has a significant effect on the environment is based on the thresholds described in the environmental document. These thresholds of significance can be adopted by the local agency or can be based upon those standards set forth in Appendix G of the CEQA Guidelines (14 Cal Code Regs ["CEQA Guidelines"] Section 15064). Accordingly, the determination of significance is governed by CEQA Guidelines 15064.4, entitled "Determining the Significance of Impacts from Greenhouse Gas Emissions." CEQA Guidelines 15064.4(a) states:

> *[t]he 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 shall 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. A lead agency shall have discretion to determine, in the context of a particular project, whether to …* [use a quantitative model or qualitative model] (emphasis added).

CEQA Guidelines 15064.4(b) clarifies that "[a]n iron clad definition of significant effect is not always possible because the significance of an activity may vary with the setting." Therefore, consistent with CEQA Guidelines 15064.4, the GHG analysis for the Project appropriately relies upon a threshold based on the exercise of careful judgement and believed to be appropriate in the context of this particular project: net zero GHG emissions.

CEQA Guidelines Section 15064(h)(1) states that "the lead agency shall consider whether the cumulative impact is significant and whether the effects of the project are cumulatively considerable." A cumulative impact may be significant when the project's incremental effect, though individually limited, is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of other past, current, and reasonably foreseeable probable future projects. As discussed above, climate change is the product of incremental contributions of GHG emissions on a global scale.

Section 15064(h)(3) states that:

> *[a] lead agency may determine 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…that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located.*

The discussion of project-level GHG emissions reduction actions and thresholds in Appendix D, Local Actions, of the 2022 Climate Change Scoping Plan states: "although achieving zero GHG emissions may be an appropriate overall objective, it should be noted this approach may not be feasible or appropriate for every project" (page 24).

When such a stringent threshold is selected, a project cannot have a cumulatively considerable impact because it would yield no net incremental increase in the level of existing GHG emissions in the existing environment.

2.7.2.2 *Analysis*

Greenhouse Gas Emissions Generation

Effects of Climate Change

The increase in the Earth's temperature is expected to have wide-ranging effects on the environment. Although global climate change is anticipated to affect all areas of the globe, there are numerous implications of direct importance to California. Statewide average temperatures are anticipated to increase by between 3 and 10.5°F by 2100. Some climate models indicate that this warming may be greater in the summer than in the winter. This could result in widespread adverse impacts to ecosystem health, agricultural production, water use and supply, and energy demand. Increased temperatures could reduce the Sierra Nevada snowpack and put additional strain on the state's water supply. In addition, increased temperatures would be conducive to the formation of air pollutants, resulting in poor air quality.

It is also important to note that even if GHG emissions were to be eliminated or dramatically reduced, it is projected that the effect of previous emissions would continue to affect global climate for centuries.

Future residents of the Proposed Project site could be exposed to increased risk of dehydration, heat stroke, heat exhaustion, heart attack, stroke, and respiratory disease. These risks, however, would be no different from those experienced by the San Diego region as a whole under the described scenario. Increased temperatures would result in more frequent use of air conditioning that would increase energy costs to residents and could put a strain on the area's energy supplies. Because the Proposed Project is located inland well above sea level, no impacts related to sea level rise are anticipated.

GHG Project Design Features[5]

The following Project PDFs are discussed in the Project's Specific Plan, listed on Table 1-2 and in Chapter 7.0 of this EIR, and required as conditions of approval from the County of San Diego.

Project construction PDFs include:

1. Construction equipment shall be operated in accordance with CARB's Airborne Toxic Control Measure (ATCM) that limits diesel-fueled commercial motor vehicle idling. In accordance with the subject ATCM (see Cal. Code Regs., tit. 13, §2485), the drivers of diesel-fueled commercial motor vehicles meeting certain specifications shall not idle the vehicle's primary diesel engine for longer than five minutes at any location. The ATCM requires the owners and motor carriers that own or dispatch such vehicles to ensure compliance with the ATCM requirements.

2. Tier III or higher construction equipment will be used, with the exception of concrete/ industrial saws, generator sets, welders, air compressors, or construction equipment where Tier III or higher is not available.

3. To the extent feasible, diesel equipment fleets that exceed existing emissions standards will be utilized when commercially available in the San Diego region.

4. To the extent feasible, electric and renewable fuel powered construction equipment will be utilized when commercially available in the San Diego region.

5. To the extent practicable and feasible, electricity will be used to power appropriate types and categories of construction equipment (e.g., hand tools).

6. As a PDF, the Applicant will develop and provide to all homeowners an informative brochure to educate homeowners regarding water conservation measures, recycling, location of the EV charging stations, location of outdoor electric outlets to promote using

[5] For purposes of clarification, it is noted that the PDFs listed herein were located below the analyses of construction and operational impacts in the 2018 circulated EIR. They have been moved up to allow the reader to see all PDFs applied to Project modeling. Where substantively revised, 2018-circulated PDFs are highlighted with an "R" for "revised." PDFs that have been further clarified are also listed separately below.

electrical lawn and garden equipment, and location of nearby resources such as dining and entertainment venues, small commercial centers, and civic uses to reduce vehicle miles traveled. This brochure will be developed and provided to PDS for review prior to occupancy of the first unit.

7. The Project will comply with County Municipal Code Section 68.508-68.518. A Construction and Demolition Debris Management Plan and a refundable performance guarantee will be developed by the Construction Contractor prior to building permit issuance, and implemented to divert debris from construction and demolition away from landfills. The plan will require that 90 percent of inerts and 70 percent of all other materials from the Project are recycled.

Project operational PDFs are as follows:

8R.[6] The Proposed Project will comply with the California Title 24 Energy Code in effect at the time of building permit application. The following energy efficient items will be included in all residential units: improved HVAC systems with sealed (tight) air ducts; enhanced ceiling, attic and wall insulation; install energy conserving appliances such as whole house fans; high-efficiency water heaters (tankless water heaters); energy-efficient three coat stucco exteriors; energy efficient appliances; programmable thermostat timers; and high-efficiency window glazing.

9. Roof anchors and pre-wiring to allow for the installation of PV systems where such systems are not installed as part of Project implementation will be provided on additional non-residential structures (e.g., if an on-site WTWRF is approved as part of the Project).

10R.[7] The Center House parking area will include eight 19.2 kW Level 2 EV charging stations (serving two parking spaces). The Project will also install a Level 2 EV charging station (220-volt chargers) within the garage of each residential unit (453 total).

11. The Project's outdoor landscaping plan will use turf only in sports field, dog park and park/recreation areas; maximize drought-tolerant, native, and regionally appropriate plants through planting in conformance with the Project Conceptual Landscape Plan and the County's Water Conservation and Landscape Design Manual; and incorporate weather-based irrigation controllers, multi-programmable irrigation clocks, and high efficiency drip irrigation systems. At the time of final inspection, a manual will be placed in each building that includes, among other things, information about water conservation. The Project shall submit a Landscape Document Package that complies with the referenced County Ordinance and demonstrates a 40 percent reduction in outdoor use. The Landscape Document Package shall be submitted to the County for review and approval prior to

[6] The previous PDF required the Project to comply with the 2016 Title 24. The 2018 PDF did not indicate that the Project will comply with the latest California Energy Code in effect at the time of building permit application. This revision indicates that the Project would utilize the latest Code when building permits are requested by the Project. Currently the latest Code applicable to this Project as of the date of this report is Title 24 (2022) which went into effect on January 1, 2023.

[7] The revision increases the number of EV charging stations from two to eight within the Center House parking area. The Project will also now install charging stations within each of the residential units instead of providing the plumbing for such units.

issuance of any building permits and compliance with this measure shall be made a condition of the Project's approval.

12. The Project will utilize reclaimed water from the proposed WTWRF (or the existing HGV WRF) for outdoor irrigation.

13R.[8] The Project will install rooftop solar PV panels (a photovoltaic solar system) on all residential units within the Project to produce a total of 4,165 kW of solar power.

14. Project potable water use will be reduced by 20 percent through installation of low-flow water fixtures, reduction of wastewater generation by 20 percent, installation of low-flow bathroom fixtures, and installation of weather-based smart irrigation control systems.

15R.[9] As a matter of regulatory compliance, the Project will comply with Section 5.106.5.2 of the latest California Green Building Standards Code (CALGreen Code) in effect at the time of building permit application, which requires the provision of designated parking for shared vehicles and clean air vehicles. This will occur at the Center House and Project parks.

16. As discussed in the Specific Plan, the Project will provide bicycle parking facilities and bicycle circulation improvements to encourage the use of bicycles (see also *Improvement Plans*).

17. Marked crosswalks connecting the east and west sides of Country Club Drive will be located from each of the Project entries to the future multi-use trail on the west side of the road to accommodate pedestrians/equestrians in crossing the road.

18. The Project's parking facilities will comply with the County's Parking Design Manual that requires parking areas to minimize the heat island effect that results from asphalt and/or large building block surfaces such as parking lots.

19. The Project will provide electrical outlets in all residential backyards and within the common areas of multi-family development areas.

20. Areas for storage and collection of recyclables and yard waste will be provided.

[8] Per ConSol's 2023 report (Attachment B to EIR Appendix J1), the Project is capable of installing up to 4,165 kW of solar power on all residential rooftops within the HGV South development, which equates to 6,296,470 kWh of energy produced annually. Project modeling shows total Project energy consumption, including the approximately 5,000 s.f. Center House, would total 3,147,533 kWh. Therefore, the solar power generated on site from the residential PV, is sufficient to offset all energy consumption, including that of the Center House. The increased capacity assumes incorporation of 360-watt panels instead of the 2018 FEIR modeled 285-watt panels. Also, as noted in PDF 27, the Project will not install natural gas on site.

[9] The previous PDF requires the Project to comply with the 2016 California Green Building Standards Code (CALGreen Code). This revision simply indicates that the Project would utilize the latest CALGreen Code when building permits are requested by the Project. Currently the latest code applicable to this Project as of the date of this report is CALGreen Code (2022) which went into effect on January 1, 2023.

21. The Landscaping Plan for the Project will include the installation of a minimum of 2,045 trees within the Project site.

22. The HOA will provide two electrical vehicles that will be sited at the Center House for use by residents for service that further connects various Project components, land uses, parks/open spaces, and the retail/commercial uses of HGV and HGV South.[10] The vehicles will be provided to the HOA with the issuance of the first occupancy permit and the future provision and maintenance of such vehicles shall thereafter be the responsibility of the HOA in accordance with the CC&Rs. The vehicles will be available for use based upon a self-service check-in system utilizing HOA identification cards. This program will terminate when a transit linkage is proposed by the local transit district.

23. An area within the developable portion of the Center House will be reserved for dedication for a transit stop for bus service when a local transit line is extended to service the HGV/HGV South Village area. The Project's proposed circulation network of sidewalks, trails, and bicycle routes will provide connections to the transit stop to further provide a regional alternative transportation system.

24. The Project shall submit building plans illustrating that the Project would install one rain barrel per every 500 square feet of available roof area provided that state, regional or local incentives/rebates are available to fund the purchase of such rain barrels and roof area is available to feasibly install the barrels.

25. The HOA will provide informational materials on SANDAG's rideshare programs like iCommute. The Applicant will develop and provide to all homeowners an informative brochure, approved by the County, to educate homeowners regarding water conservation measures, recycling, location of the EV charging stations, location of outdoor electric outlets to promote using electrical lawn and garden equipment, and location of nearby resources such as dining and entertainment venues, commercial centers, and civic uses to reduce VMT.

New GHG PDFs have been included in the Project to further reduce GHG emissions beyond what was analyzed in the 2018 EIR or have been further clarified.

26. The Project will not install wood or natural gas burning hearth options in residential units.

27. Natural gas lines will not be installed on site (the Project will be 100 percent electric).

[10] Project Commercial uses may include overnight accommodations of up to four rooms that can only be used by HGV South and HGV guests. A public commercial component that may include food/beverage services (such as a café); administrative and professional services; convenience sales; or personal services (including hair or nail salon, day spa) are also possible types of uses, all or any of which would be located at the Project Center House. The total square footage of structures associated with the Center House is approximately 5,000 s.f. (with a minimum of 1,500 s.f. of commercial use).

28.[11] The Project will install rooftop solar PV panels (a photovoltaic solar system) on the Center House to the maximum extent feasible based on its final design.

TIMING: The design measures described above shall be incorporated into the site plan, building plans and landscape plan for the Project as applicable to ensure implementation.

MONITORING: Prior to issuance of each permit, consistency with the applicable plans and the PDFs will be confirmed by the County. The County of San Diego Planning & Development Services (PDS) will ensure that the sustainable design measures on all such plans for the Project are implemented. PDS will ensure that the Landscape Plans are in compliance with the measures.

All of the PDFs described above will be conditions of approval for the Project, as shown in Table 1-2 and Chapter 7.0 of this EIR.

Effects of Project GHG Emissions

Emission estimates were calculated for the three GHGs of primary concern (CO_2, CH_4, and N_2O) that would be emitted from Project construction and from the Project's sources of operational emissions including on-road vehicular traffic, electricity generation, water usage, area sources, and solid waste disposal. Emissions calculations conservatively assumed that the 111-acre Proposed Project would include the construction of 453 residential dwelling units, park and recreational uses, and an on-site wastewater treatment and water reclamation facility (WTWRF). The first construction phase focuses on overall site grading, the second phase includes infrastructure installation (utility pipelines and roadways), and the third phase addresses "vertical" development of the Project (residential building and WTWRF construction, asphalt paving, and architectural coating). Table 2.7-2, *Project Component Assumptions*, presents a summary of the land use designation, sizes and other metrics used for CalEEMod (SCAQMD 2020).

Project emissions discussed below are the result of Project-specific modeling. That modeling incorporates sustainability and efficiency PDFs that would reduce the Project's operational GHG emissions, and would be included as building permit conditions and verified prior to the issuance of final certificate of occupancy. These include area source reductions, energy efficiencies, and water conservation measures, as specified in this section and in Table 1-2 of this EIR. Project emissions take into account applicable standards and regulations that the Project would need to comply with for buildout ending in 2029.

Construction Greenhouse Gas Emissions

Construction activities emit GHGs primarily through the combustion of fuels in the engines of off-road construction equipment, on-road construction vehicles and in the commute vehicles of the construction workers. Smaller amounts of GHGs are also emitted through the energy use embodied in any water use (for fugitive dust control) and lighting for the construction activity. Every phase

[11] As stated in footnote 8, Project residential units would supply 100 percent of the electricity needs for both the residential units and the Center House. By installing PV panels on the Center House, an additional reduction in electricity needs will be provided, but no credit has been taken for this savings. (The exact rooftop capacity of the Center House is unknown until detailed plans for the Center House are provided.) Once the solar installation on the Center House is added at the time permits are issued, the total on-site energy production will exceed 6,296,470 kWh.

of the construction process emits GHGs (including grading, building, and paving) in volumes proportional to the quantity and type of construction equipment used. The heavier equipment typically emits more GHGs per hour of use than the lighter equipment because of their greater fuel consumption and engine design.

This analysis assesses maximum daily emissions from individual construction activities, including site preparation, grading, backbone infrastructure, road construction, bridge construction, building construction, parking lot paving, and architectural coating. Construction would require heavy equipment during mass grading, utility installations, building construction and parking lot paving. Construction equipment estimates are based on default values in the Roadway Model and CalEEMod, as well as typical equipment used for the backbone infrastructure phase. Table 2.7-3, *Expected Construction Equipment*, presents a summary of the assumed equipment and timeframe of use that would be involved in each stage of construction.

For the purpose of this analysis, Proposed Project construction is now assumed to start in 2025 and is anticipated to be fully built out and operational early in year 2029, with full year operations to commence in 2030. This is conservative because the earlier the date, the less stringent the regulatory standards and controls on emissions. The quantity, duration, and the intensity of construction activity have a direct effect on construction emissions. If construction is delayed or occurs over a longer period, emissions could be reduced as more modern and cleaner-burning construction equipment is utilized, and stricter regulations are adopted. In any event, the Project will have net zero emissions.

The first phase would be site preparation and blasting that would last approximately three months. Backbone infrastructure and road construction would proceed next and last approximately seven months. Grading, bridge construction, and building construction would follow, with building construction being the longest phase at approximately three years. Project construction would finish with parking lot paving and architectural coating, which would occur for approximately five months. In addition to the construction schedule and equipment mix shown on Table 2.7-3, equipment hours of operation and duration, worker trips, etc., are included in EIR Appendix J1, Attachment A (see Section 3.0 of the modeling output).

Construction emissions from the demolition, site grading and the construction of the residences and WTWRF were calculated using the modeling software CalEEMod version 2020.4.0, developed by BREEZE Software for the SCAQMD in 2021.[12] CalEEMod was utilized for all construction calculations and has been manually updated to reflect SDAPCD Rule 67 paint Volatile Organic Compound (VOC) standards. The emissions from the construction activities for the off-site roadway areas also were incorporated into CalEEMod 2020. No reductions were taken for any construction-period PDFs.

[12] Since this Project analysis was started, an updated version of CalEEMod has been released by SCAQMD. The updated version of the model Version 2022.1 is the latest update to CalEEMod and brings a new web-based platform, with many new features and components. In addition, the model includes updated emission factors which generally are lower when compared to the 2020 model. As a result, the 2022.1 version and future subsequent updates of CalEEMod would estimate lower Project GHG emissions once fully operational when compared to the model used in this analysis. Use of CalEEMod 2020 therefore results in a conservative (greater impact) analysis under CEQA.

Development under the Proposed Project would also result in changes in CO_2 sequestration from the atmosphere. By removing existing vegetation, the Project would result in a one-time carbon exchange. Emissions from this land use change have been estimated according to the IPCC protocol for vegetation. It should be noted that the loss of sequestered carbon estimate would be offset as the Proposed Project would also plant new landscape trees which would sequester additional carbon through each growth cycle, resulting in increasing amounts of sequestered carbon each year for the life of the tree.[13]

As shown in Table 2.7-4, *Estimated Construction CO_2e Emissions Summary*, the Project-related construction activities are estimated to generate approximately 3,701.36 MT of CO_2e, or an annualized increase over 30 years of 123.38 MT of CO_2e.[14]

Operational Greenhouse Gas Emissions

Operational sources of GHG emissions include the following sources: area sources, energy use, water use, solid waste, stationary sources (generator), and transportation (mobile). The Project was assumed to be fully operational in 2030. Table 2.7-5, *Estimated 2030 Annual GHG Emissions Summary (MT/Year) with Project Design Features and State and Federal Mandates*, presents the summary of the annual emissions for the Project (including emissions associated with the WTWRF). Operational GHG emissions for Area, Water, and Solid Waste sources were estimated using CalEEMod default inputs. As shown in Table 2.7-5, excluding amortized construction emissions, the Project's annual 2030 operational emissions would total 914.34 MT CO_2e.

Area Emissions. Emissions from landscaping equipment, architectural coatings, and household consumer products are considered area sources. As described under "GHG Project Design Features," the Project would not install any natural gas or wood burning hearths in residential uses. Estimated annual GHG emissions from area sources for the Project would be 5.63 MT CO_2e.

Energy Emissions. Projects that increase electricity consumption also result in an indirect increase in GHG emissions. The generation of electricity through the combustion of fossil fuels typically yields CO_2, and to a much smaller extent, methane and nitrous oxide.

The Proposed Project would comply with the California Title 24 Energy Code in effect at the time of building permit application. The following energy efficient items are planned for the housing development: improved HVAC systems; enhanced ceiling, attic, and wall insulation; whole house fan installation; high-efficiency water heaters; energy-efficient three-coat stucco exteriors; programmable thermostat timers; and high-efficiency window glazing. Roof anchors and pre-wiring to allow for the installation of PV systems would be provided on additional non-residential structures. Using electricity generated from renewable sources displaces electricity demand which would ordinarily be supplied by the local utility.

[13] Although sequestration numbers were generated for the 2018 EIR, benefits of new landscaping were not included in past analysis, rendering that modeling extremely conservative. Both impacts and benefits are now incorporated into current Project modeling. Benefits duplicate those identified in 2018 (see Attachment A to Appendix J).

[14] Construction emissions have been amortized over a 30-year period, consistent with South Coast Air Management District standards.

An EV charging station and use of renewable energy are both incorporated into the Project as well, as described in the discussion of PDFs above.

Regarding SDG&E's RPS, when CalEEMod 2020.4.0 was developed, it was updated to reflect SDG&E's latest emissions rates and to show that a 33 percent RPS was achieved in the default intensity emission rates within the model. This rate would be consistent to all operational years within the model, and requires manual updating to reflect expectations for the operational year. CalEEMod 2020.4.0 by default assumes that each MWh of energy delivered by SDG&E is made up of 33 percent zero emission renewable energy (such as wind or solar) and 67 percent carbon-based fueled energy (i.e., non-renewable sources). As SDG&E adds renewables, the RPS achieved increases and SDG&E can reduce reliance on carbon-based system generation sources.

Given this, if the Project did not install solar the Project operations would expect to receive at least 60 percent of the energy from renewable sources and 40 percent from non-renewable sources without usage of any on-site solar generation. From a modeling perspective, the Project baseline without added solar would be based on the average GHG intensity for the model year. Any solar added by the Project would be renewable and would therefore offset nonrenewable sources generated by SDG&E. Since the on-site power generation would be 100 percent renewable and the excess power (amount of electricity exceeding the Project use) would flow into SDG&E's electrical grid as accepted in the NEM program (SDG&E 2023) per the CPUC (2023), any power generated through on-site solar and in excess of Project need would add renewable energy resources to the electrical grid. This would decrease SDG&E production demand supported by non-renewable sources and provide access to renewable energy to off-site users within the surrounding community.

As a third-party check of Project analyses, ConSol, a building energy efficiency consultant, was retained to calculate the residential energy demand for the Project. ConSol modeled the energy demand of prototype residences with CEC's public-domain compliance software, known as California Building Energy Code Compliance – Residential. The objective of the ConSol report was to calculate the annual energy use with options that achieve: (1) compliance with the 2016 Title 24 Standards (California's Energy Code), and (2) Zero Net Energy (ZNE) standards as defined in the California Energy Commission's (CEC's) 2015 Integrated Energy Policy Report. A 2023 update to the report (see Attachment B of Appendix J1) updates buildings to be all electric, and to comply with 2019 Title 24 standards. Based on some stricter standards in the 2019 Title 24 regulations, as well as maximization of solar installation on residential Project roofs (to 60 percent of roof area) combined with increased efficiency of solar panels over the last few years (and readily available in today's market), the Project would equate to 4,165 kW of solar installed on site, and is capable of producing approximately 6,296,470 MWh per year. This would offset 100 percent of the electrical usage provided in the *Global Climate Change* study, but not all of the Project energy needs when vehicular emissions were considered. Those additional GHG emissions were assessed as mitigable through an additional 1,720 kW system.[15]

[15] That would require additional panels. Using ConSol's estimates of 83,000 s.f./1MW of solar, the requirement of 1,720 kW would require approximately 142,760 s.f. of roof area.

With the implementation of energy-reducing PDFs and regulations, the Project would result in the indirect emission of 461.83 MT CO_2e annually from electrical usage. Calculations are provided in Attachment D to Appendix J1.

Water Use Emissions. Water-related GHG emissions are from the conveyance of potable water and treatment of wastewater at the WTWRF. The Project includes several water conservation measures per the latest CALGreen mandates to reduce water consumption through such measures as the installation of the low flow water features, and the use of drought-tolerant landscape. Using California Energy Commission energy values for water conveyance in CalEEMod and the PDFs, the Project's annual GHG emissions related to water treatment and conveyance are estimated to be 84.19 MT CO_2e.

Solid Waste Emissions. Solid waste generated by the Project would also contribute to GHG emissions. Treatment and disposal of solid waste produces significant amounts of methane. Through compliance with AB 341 and the County's Strategic Plan to Reduce Waste, the Project would achieve an average 75 percent diversion of waste during operations. For conservative modeling purposes, however, the CalEEMod diversion rate of only 25 percent was assumed, which would result in solid waste-related emissions of 132.5 MT CO_2e per year.

Stationary Emissions. Project design includes an on-site WTWRF capable of treating up to 180,000 GPD. Two 84 horsepower diesel-powered emergency generators would be used at the WTWRF for backup power during electric power failures. These generators would be tested regularly with an assumed combined testing and emergency operations duration of 200 hours annually which was updated manually in CalEEMod. The WTWRF facility was assumed to generate GHG emissions typical to default settings within CalEEMod. Stationary annual GHG emissions were estimated to be 14.14 MT CO_2e.

Transportation Emissions. GHG emissions from vehicles come from the combustion of fossil fuels (primarily gasoline and diesel) in vehicle engines. The quantity/type of transportation fuel consumed, amount of vehicle trips, and trip distances that motorists travel are relevant in analyzing GHG emissions from vehicles. Mobile source emissions were based on the projected generated traffic volumes of 4,010 Average Daily Trips (ADT) as identified within Attachment H to 2018 EIR Appendix D.[16] The average trip length calculated for this Project was 7.88 miles per trip (LLG 2016; see the Average Trip Length Analysis in Appendix C to the 2018 EIR Appendix J). The Project's trip distance of 7.88 miles (as stated in 2018 Appendix J, Appendix C) was also updated manually within CalEEMod for this GHG analysis.

Excluding reductions from EVs, the Project would result in annual GHG emissions for vehicle related emission of 2,846.07 MT CO_2e. As explained in Appendix J1 discussion relative to

[16] It is noted that traffic volumes for the purposes of residential use traffic impacts were conservatively modeled assuming 4,500 ADT associated with an assumed 4,500 single-family residential (SFR) uses. Those conservative assumptions and associated impacts/mitigation remain as previously analyzed. However, for purposes of this GHG analysis, emissions are based on the 2018 memo noted above, which assumes the current Project description of a total of 453 residential units of which 193 units are identified as SFR and would generate 1,930 ADT and 263 units are identified as multi-family and would generate 2,080 ADT, for a total of 4,010 ADT.

reductions of emissions resulting from charging stations and subsequent EV rather than gasoline vehicle use, a GHG avoidance of 295.66 MT CO_2e would be expected.

In summary, as shown in Table 2.7-5, assuming implementation of retained 2018 PDFs, the Project would result in total operational GHG emissions of 3,667.74 MT CO_2e per year.[17]

Taking all of the above into account, and as shown on Table 2.7-4, the total amount of Project-estimated construction emissions is anticipated to be 3,701.36 MT CO_2e (amortized over 30 years to 123.38 MT CO_2e)[18] over the existing physical environmental setting. Taking all of the above into account, and as shown on Table 2.7-5, the total amount of Project-estimated annual (operational) GHG emissions incorporating retained 2018 PDFs would be 3,544.36 MT CO_2e over the existing environmental setting. When the amortized construction emissions number of 123.38 is added in, and the updated and additional new PDFs are applied, total Project operational and amortized construction emissions in 2030 are estimated to generate 1,037.72 MT CO_2e. As such, the emissions associated with the Project would result in **significant GHG impacts. (Impact GHG-1)**

Conflict with Plans, Policies and Regulations Adopted for Purposes of Reducing GHG Emissions

Consistency with Applicable Plans (CEQA Guidelines Section 15064.4[b][3])

A qualitative analysis of the Project's compliance with applicable plans and policies for reduction of GHG emissions considers the Project's potential to conflict with an applicable plan—the County of San Diego's General Plan—as that planning document contains various goals, policies and objectives related to the reduction of GHG emissions and global climate change. The Project's potential to conflict with other applicable policies adopted for the purpose of reducing GHG emissions at the regional level is identified as a factor that the lead agency considered pursuant to CEQA Guidelines Section 15064.4(b).

The regulatory plans and policies discussed in Section 2.7.1.3 aim to reduce national, state, and local GHG emissions by primarily targeting the largest emitters of GHGs: the transportation and energy sectors. Plan goals and regulatory standards are thus largely focused on the automobile industry and public utilities. For the transportation sector, the reduction strategy is three-pronged: to reduce GHG emissions from vehicles by improving engine design; to reduce the carbon content of transportation fuels through research, funding, and incentives to fuel suppliers; and to reduce the miles these vehicles travel through land use change and infrastructure investments.

For the energy sector, the reduction strategies aim to reduce energy demand; impose emission caps on energy providers; establish minimum building energy and green building standards; transition to renewable non-fossil fuels; incentivize homeowners and builders to reduce energy; fully recover landfill gas for energy; expand research and development; and so forth.

[17] The reader should note that all of the 2018 PDFs previously listed here are now shown on pages 2.7-20 through 2.7-24.

[18] The "Project life" of 30 years is consistent with the methodology used by the South Coast Air Quality Management District's GHG guidance (SCAQMD 2008).

EO S-3-05 established GHG emission reduction targets for the state, and AB 32 launched the Climate Change Scoping Plan that outlined the reduction measures needed to reach these targets. SB 32 established a mid-term target critical to help frame updates to the Scoping Plan needed to continue driving down emissions and achieve the long-term target. This Project would be carbon neutral by design. Through the mandatory PDFs described in this section and on- and off-site mitigation within the County as described below in Section 2.7.5, the Project would attain a net zero MT CO_2e increase in GHG emissions, which is consistent with AB 1279, and on track for meeting the SB 32 and EO S-3-05 reduction targets, as well as consistent with the recently approved (2022) Scoping Plan update which lays out the sector-by-sector roadmap for California to achieve carbon neutrality by 2045.

As discussed above, the Proposed Project would achieve GHG reductions through PDFs that include improved energy efficiency. Verification and commissioning of these features would occur through independent third-party inspection and diagnostics. As a condition of building permit approval, the Proposed Project is required to comply with the Title 24 standards that are in effect at the time of construction. Verification of increased water and energy efficiencies will be demonstrated based on a performance approach, using a CEC approved water and energy compliance software program, in the Title 24 Compliance Reports provided by the Project Applicant to the County prior to issuance of the building permit.

The Project also would be consistent with specific COS policies 14.3, 15.1, 15.4, 17.2, 17.6, and 19.1, in that the Project: includes many design features to reduce energy and water use; would supply 100 percent of the Project's electricity needs through renewable sources; proposes sustainability and efficiency features consistent with the California Green Building Code; proposes implementing energy efficiency features that would achieve Title 24 requirements; would divert 90 percent of inert construction materials and 70 percent of all other construction materials from landfills through reuse and recycling; would provide areas for storage and collection of recyclables and yard waste; and proposes implementing water conservation strategies to reduce water usage by installing low flow water features. Plan conformance was additionally analyzed in Section 3.1.5, *Land Use and Planning*, of this EIR and remains unchanged.

Consistency with SB 375 and SANDAG's 2050 RTP/SCS

San Diego Forward envisions a regional pattern of growth and development that reflects smart growth principles, which include transit-oriented development, preserving natural resources and agricultural lands, and building communities that are resilient to the consequences of climate change and other environmental changes. Strategic decisions about how land is used are also called for to support surrounding communities where future housing and jobs are located (2021 Regional Plan; Chapter 2: Sustainable Communities Strategy–A Framework for the Future).

At the regional level, SANDAG's San Diego Forward was adopted for the purpose of reducing GHG emissions attributable to passenger vehicles in the San Diego region. While San Diego Forward does not regulate land use or supersede the exercise of land use authority by SANDAG's member jurisdictions (i.e., the County of San Diego and cities therein), the regional plan is a relevant regional reference document for purposes of evaluating the intersection of land use and transportation patterns, and the corresponding GHG emissions. The underlying purpose of San Diego Forward is to provide direction and guidance on future regional growth (i.e., the location of

new residential and non-residential land uses) and transportation patterns throughout San Diego County as stipulated under SB 375. Although the Proposed Project would increase the existing density of residential land uses on the Project site, it would also include a number of PDFs to reduce GHG emissions that support the goals of San Diego Forward. For example, the Project includes a PV solar system, EV charging stations, low-flow water fixtures, and drought tolerant landscaping.

The County's adopted General Plan also emphasizes sustainable community design principles within its Goals and Policies. By locating the Proposed Project near existing and planned infrastructure, services, and jobs in a compact pattern of development, while at the same time promoting sustainability among its residents, the Project has been designed around the guiding principles of the General Plan. Developing the Proposed Project in this manner meets a number of the objectives of San Diego Forward, AB 32, and SB 375.

While the Project site was not identified for development in SANDAG's San Diego Forward 2020 forecasted development pattern maps, the Project site location was identified for development consistent with the 2011 General Plan in the SANDAG 2035 forecast development pattern map, and is in-line with the SCS GHG benefits as the Project would support and/or provide a range of housing types, services and jobs in a compact pattern of development located within 0.5 mile (a 10-minute walk) of commercial and civic facilities, and is located near to transit stops and employment centers. This in turn, would reduce the size of required infrastructure improvements and the number and length of automobile trips. It is also noted that SANDAG has identified the average trip length as 7.9 miles. As noted above, the average distance of Project trips was calculated by LLG to be 7.88 miles, which is consistent with 7.9 (see Appendix C to 2018 EIR Appendix J).

As stated above and later affirmed by the Appellate Court,[19] the Project is consistent with San Diego Forward, the plan's vehicle mileage projections, and encourages local walking in keeping with the plan. The Project's location would contribute to the reduction of vehicle emissions through design, location, and minimization of off-site vehicle trips, which also complies with the County's efforts to reduce sprawl and associated emissions. In that regard, the Project is consistent with the County's effort to move future development closer to cities, shopping, and employment centers.

The Project is located approximately less than 0.5 mile (walking distance) from an existing mixed-use village (Harmony Grove Village), with residential, commercial, and recreational uses. The Project is also within a 2–mile radius of expansive employment centers and a concentration of urban and mixed land uses that include Palomar Hospital, Stone Brewing, numerous "big box" retail stores with surrounding retail, apartment complexes, mobile home parks, and a large-scale automobile mall. ERTC, and a confluence of regional transportation connectors (I-15 and SR-78), are located within approximately 2.5 miles of the Project site. Beyond this are located California State University San Marcos, and Kaiser Permanente San Marcos.

[19] Elfin Forest Harmony Grove Town Council et al. v. County of San Diego and RCS, 37-2018-00042927, Court of Appeal, Fourth Appellate District (Division One), filed October 14, 2021.

Further illustrating the Project's consistency with San Diego Forward and the County's General Plan, an October 2023 memorandum prepared by Intersecting Metrics,[20] concluded the Project Site is "infill" in nature and would be exempt from full VMT analysis under the County's adopted Transportation Study Guidelines (TSG).[21] Moreover, the Proposed Project site would be considered an infill development both with and without the Project land uses. As noted in Table 1 of the TSG, a project is considered infill if it is: (1) identified in the County's location-based maps, or (2) meets infill criteria outlined in the October 2021 "Infill Areas in Unincorporated San Diego County Memo," Fehr & Peers (included as Appendix D to the TSG). Section 3.3.1 of the TSG also outlines the criteria an area must meet to be considered infill.

Figure 2.7-1 depicts the developed nature of the Project area and proximity to nearby residential, commercial and industrial uses, as well as to state and interstate routes.

The following matrix summarizes relevant numerical data specific to the Project site.

Metric	Standard	Existing Conditions	Meets Standard?	With Project Conditions	Meets Standard?	Change
Household Density (Units Per Square Mile)	425	818	Yes	1,321	Yes	+503
Intersection Density (Intersections Per Square Mile)	128	136	Yes	139	Yes	+3
Jobs Accessibility (Accessibility Score)	12.73	44.49	Yes	44.49	Yes	-

The HGV Specific Plan area has a total of 736 existing dwelling units that have been built and are fully occupied. The Project site would add an additional 453 dwelling units, resulting in 1,189 total units between both sites—with an increased housing density of 1,321 units per square mile (1,189 units/0.9 square mile). This is well above the infill requirement of 425 housing units per square mile relevant to an exemption.

The HGV Specific Plan area has 123 existing intersections (note there are 6 existing intersections in the Harmony Grove South area), resulting in an intersection density of 136 intersections per square mile (the Proposed Project will add an additional 9 intersections). This is well above the infill requirement of 128 intersections per square mile relevant to an exemption.

A job accessibility analysis was conducted based on all of the total number of jobs within a 15-mile radius of the Project site, divided by the distance of the job from the Proposed Project site. The Project site has a Job Accessibility score of 44.49, which is well above the infill requirement.

[20] The full memorandum is provided in Appendix J2 to this FEIR.

[21] Although the VMT analysis circulated with the 2018 FEIR was determined to be adequate and sufficient by the Appeals Court, a subsequent analysis has been completed. Consistent with that analysis, and consistent with the County's guidelines relevant to VMT updated in September 2022 in compliance with SB 743, if a VMT analysis were to be initiated for a new EIR today, the Project would be exempted.

The Project would provide a variety of housing opportunities located near major employment centers consistent with the smart growth concept of locating housing closer to retail, services, and jobs on smaller lots to reduce required infrastructure and the length of automobile trips while increasing community livability and preserving open space by compact development. The Project's residential uses are within walking distance of, and are connected to, the commercial services and civic uses of its central commercial/civic core and the HGV Village Center. As analyzed in the Appendix J2 memorandum prepared by Intersecting Metrics, the Project is considered "infill" in nature and would, therefore, be both exempt from full VMT analysis and not in conflict with relevant plans or policies.

Significance of Plan, Policy and Regulatory Compliance

Summary

The Proposed Project would not conflict with applicable plans because design features would conform to the primary regulations and policies governing the control of GHG emissions stated above. Accordingly, **with implementation of the PDFs identified above, impacts associated with GHG emissions would be less than significant**.

2.7.3 Cumulative Impact Analysis

As described in Section 2.7.2.1 of this discussion, global climate change is a cumulative issue by definition, and its analysis constitutes cumulative review. As a result, additional discussion is not required.

2.7.4 Significance of Impacts Prior to Mitigation

Impact GHG-1 Project construction and operational emissions combined would not be fully offset by PDFs identified for the Project when taking vehicular emissions into account. This is identified as a significant impact.

2.7.5 Mitigation

After analyzing and requiring all reasonable and feasible on-site measures for avoiding or reducing GHG emissions, the Applicant has committed to reducing remaining Project emissions to "net zero" through the mitigation specified below.

CEQA Guidelines recognize that in appropriate situations, off-site actions may be used as attenuation for GHJG emissions. CEQA Guidelines Section 15126.4(c)(2) states that reductions in emissions may result "from a project through implementation of project features, project design, or other measures. CARB's *2022 Scoping Plan* Appendix "D" Local Actions also recognizes that:

> *local, off-site mitigation measures implemented in the communities in which a project's impacts occur have the added potential co-benefit of reducing emissions of toxic air contaminants and criteria air pollutants, which will improve health and social and economic resiliency to climate-related impacts. Verification of local mitigation can also be more straightforward than verification of mitigation that is outside of the jurisdictional boundaries of the lead agency.*

Among the many off-site local measures that are considered in Appendix D of the 2022 Scoping Plan is the retrofitting of existing building(s) with solar panels. These panels can be equipped with solar monitoring systems. Such systems provide a real-time snapshot of solar energy production data that can verify solar production and provide documentation to the appropriate party.

Although similar types of incentives (retrofitting existing buildings with solar panels) are under consideration as the County finalizes its 2023 Draft CAP, there is no federal, state, or local regulation that can require or mandate existing and operating buildings to install solar panels to convert their current electrical sources. Draft CAP Policy E-2 addresses energy efficiency and electrification in the unincorporated area. Energy Goal E-2.2 proposes amendment of County regulations "to require (Tier 2) CALGreen or similar energy efficiency requirements for existing development projects with qualifying improvements," and for "[d]eveloping a program by 2026 to incentivize building electrification and energy efficiency." Additionally, Policy E-3 of the Draft CAP focuses on increasing renewable energy use, generation, and storage. As stated in the regulatory discussion above, it is noted that this analysis does not rely on the County's Draft CAP, which is currently under consideration for adoption by the County. It does, however, demonstrate that the Project is consistent with the County's climate goals.

Specific to the Project, an on-site PV system will be installed on an existing building that is not otherwise mandated to do so, thereby supporting energy efficiency and savings for the off-site owner. The owner of the existing off-site building(s) is incentivized to accept the on-site PV system (thereby supporting energy efficiency and electrification), as the Project would provide installation at no cost to the off-site property owner, ensure that ongoing maintenance is provided for, and that such installation would result in energy savings for that off-site owner. This would occur without the off-site property owner proposing "qualifying improvements," on the existing structure, which could trigger the installation of such solar panels as outlined in the Draft CAP. This would result in capturing existing buildings that would not be captured otherwise. The Draft CAP also does not ensure the ongoing monitoring and maintenance of such improvements, as does the Project's mitigation measure.

The Project maximizes emission reductions based on today's feasible technologies as identified in the Project PDFs enumerated within this EIR. To mitigate the 1,037.72 MT CO_2e produced by the Project after all feasible PDFs are included, the Project would need to install an additional 1,720 kW of renewable energy (i.e., solar panel) system. which is calculated based on the 1,038.20 MT CO_2e produced by the GHG avoidance rate of a 1 MW system of 0.60345 MT CO_2e/kW. Using ConSol's estimates of 83,000 s.f./1MW of solar, the requirement of 1,720 kW would need approximately 142,760 s.f. of roof area.

Therefore, in addition to the building design PDFs identified above, in order for the Project to achieve carbon neutrality (i.e., no net GHG emissions through offset to zero); the Applicant shall complete the following:

M-GHG-1 Prior to issuance of the first grading permit for the Project, compliance with M-GHG-1 shall be as follows:

a. Solar panel(s), capable of generating a total of 1,720 KW, shall be installed on an existing building(s) that does not currently utilize solar energy, located within the County of San Diego, that is not otherwise required by law or regulation through statute, regulation, existing local program, or requirement to install such solar panels. The building shall have an estimated life of at least 30 years as verified by a third-party building inspector. The solar system installation shall be completed by a licensed, bonded and insured installer; and equipped with a monitoring system to notify the property owner upon which the building is located (property owner), the installer, and the HGV South Homeowners Association (HOA) with monitoring data. The solar panels will be registered with an extended warranty for the maximum period of time feasible, not less than 30 years and the panels will be dated at the time of installation. Consistent with the North American Board of Certified Energy Practitioners (NABCEP) standards, the installation company shall have a minimum of three years' experience.

b. The identified building(s) shall be located within the County boundaries. A Covenant shall be recorded against the property, for the benefit of the Project site, stating that the Project-installed solar panel(s) must remain on the building(s) and operational for a period of 30 years. This Covenant runs with the land, not the owner, and will pass with the parcel in the event of a sale. The Covenant shall also require the property owner to allow the HOA or representative (including the County) to conduct annual baseline maintenance inspections, monitor, repair or replace the system as described in e), below, during that 30-year period. The Covenant shall also include the following provisions:

   i) the property owner shall allow the HOA or County to access the system if maintenance is indicated by the monitoring system or when issues are otherwise noted by the property owner;

   ii) the property owner shall notify the HOA and County if any repair or maintenance events become known to the property owner;

   iii) the property owner shall maintain a policy of insurance (or include the addition of such panels to the coverage limits of the building's current insurance policy) to cover against the repair or replacement of the solar system resulting from physical damage (e.g., caused by severe weather conditions, vandalism, fire and other events) and name the HOA and County as additional insureds;

iv) the property owner shall maintain and/or replace such panels with an equivalent or higher rated panel as necessary if the repair work is not completed by the HOA;

v) if the identified building is vacated or abandoned, or the building is demolished before the 30-year period, the property owner shall be required to install an equivalent unit (and provide insurance for the same) on one or more existing buildings that meet the same criteria identified in a); within the County, that would generate an equivalent amount of solar power for the remaining term of the 30-year period. The property owner shall be required to record a Covenant with the same provisions against the property upon which the new building with the replacement solar unit is located, for the remaining term of the 30-year period and notify the HOA and the County of the same, prior to the vacation, abandonment, or demolition of the existing building; and

vi) any new purchaser of the property shall notify the HOA and County that it has acquired the site and acknowledge its obligations under the Covenant, including allowing access for solar panels maintenance for the duration of the 30-year term.

c. The Applicant is required to fund and provide a report to the County that provides the following information:

i) the address of the specific building(s) upon which the installation of the solar panels required by 2024 M-GHG-1 have been installed;

ii) evidence that the building(s) is/are not required by law or regulation through statute, regulation, existing local program, or requirement to install such solar panels (i.e., additional);

iii) the amount of GHG emissions that will be reduced by the installation of such panels;

iv) a copy of the Covenant recorded against the property that includes the information required by M-GHG-1 b) above;

v) a copy of the third-party building inspector (verification) that the life of the building be at least 30 years; and

vi) a copy of the Project "Covenants, Conditions, and Restrictions" (CC&Rs or Declaration) of the HOA that include the provisions identified in paragraph e) below, including the HOA's budget that shows the reserve set aside for the purposes described in paragraph f) below, and

vii) a copy of the solar installation contract with a licensed and bonded installer, and warranty and insurance policy along with the approved solar permit. The report shall include calculations conducted by a technical GHG expert using County-approved models and/or methodologies.

d. The Applicant shall comply with County Code Section 6954, Solar Energy Systems, and obtain any required permits. The installation of such PV system shall be required to qualify for a CEQA exemption, such as PRC 21080.35 at the time of application for installation.

e. The CC&Rs for the Project shall be submitted to the County for its review prior to the approval of the first grading permit that includes the following provisions:

1. The HOA shall monitor the solar system using the module-level monitoring application described above for a 30-year period that commences from the Project's start of operations. The HOA shall keep records of solar power production during this period.

2. If any solar equipment is found to need repair or replacement, the HOA shall be responsible for such work being completed as needed in order to maintain the equivalent amount of solar power generated by such panels. The HOA shall work with the property owner, installation company and/or insurance entity to ensure that the repairs are completed in a timely manner. If the repair work is not covered by the warranty or paid for by the insurance carrier, the HOA shall be responsible for ensuring that the repair work is completed.

3. An annual maintenance and monitoring program shall be conducted by a licensed and bonded solar company (the Covenant requires the property owner to allow this annual inspection). A report shall be prepared by the solar company with the results of the inspection, including whether any repairs are needed and the amount of solar power generated by such panels. The report will be provided to the HOA, property owner, and County.

4. During maintenance, the HOA or representative shall replace (with an equivalent or higher rated panel) or repair any of the solar panels as needed in order to maintain the equivalent amount of solar power generated by such panels.

5. Any revisions to the above-described provisions of the CC&Rs shall be approved by the County, require the consent of 100 percent of the holders of first mortgages or the property owners within the HOA, and require the HOA to retain the same amount of funds set aside by this mitigation measure for the same purposes for the 30-year period.

6. The County shall be named as a party to said Declaration authorizing the County to enforce the terms and conditions of the Declaration in the same manner as the HOA or any owner within the subdivision.

7. The HOA shall maintain the budgeted reserve described in paragraph f) below for the exclusive uses described below. The County may use such funds should it decide to enforce said obligations.

8. These CC&Rs shall be confirmed by the County prior to recording the first subdivision map.

f. Applicant shall submit the initial HOA budget, subject to Department of Real Estate (DRE) rules, for review and approval by the County, that includes a set aside fund of $300,000.00, for the purpose of repairing or replacing any solar panels (see Appendix J1), should such work not be eligible for reimbursement from the property owner's insurance policy or warranty. The set aside funds may also be used to enforce the provisions of the Covenant and any insurance claim if needed. The amount of the set aside funds shall be adjusted each year by the HOA, based on the annual indexed increases in construction costs and expenses consistent with the California Construction Cost Index or similar construction industry standard index, through a reserve study prepared by a qualified consultant, hired by the HOA as required by the DRE, provided however, in no event shall the reserve fund be increased more than three percent (3 percent) in a given year. This budgeted reserve amount shall be designated and restricted exclusively for the sole purposes set forth herein and may be used by the County should it decide to enforce the obligations of the property owner. If any amount of the set aside is used by the HOA or County for such purposes, the HOA shall replenish the fund in an amount equal to what has been withdrawn.

TIMING: Mitigation measure M-GHG-1 (a, b, c, and d) shall be implemented prior to the issuance of the first grading permit.

MONITORING: M-GHG-1 includes a series of safeguards that will ensure continual compliance and monitoring during the 30-year period as described below.

The HOA is responsible for monitoring compliance with this mitigation measure and shall be responsible for taking such actions as necessary to enforce the Covenant. Additionally, a fund shall be set aside by the HOA to ensure the funding needed to enforce this provision. The County shall also be named a party to the CC&Rs, allowing the County to enforce the terms and conditions of the CC&Rs in the same manner as the HOA or any owner within the subdivision. As provided for in the Mitigation Measure, the HOA is responsible for the ongoing monitoring of the solar panels for the 30-year period. Per subparagraph c) of the M-GHG-1, above, substantial evidence will be provided that the mitigation would not occur independent of the Project (i.e., that installation of solar panels on an existing building would not otherwise be required, consistent with the CARB 2022 Scoping Plan).

The property owner is also required to maintain a policy of insurance to cover the repair or replacement of the solar system. The insurance policy will name the HOA and County as additional insureds so that the HOA/County can pay for any damage to the panels through such insurance. Finally, the Covenant shall also require the property owner to maintain and/or replace such panels as necessary if the HOA/County does not complete the repair work.

If the identified building is vacated, abandoned, or demolished before the end of the 30-year period, the property owner must install an equivalent unit (and provide insurance for the same) on one or

more existing buildings that meet the same criteria described in M-GHG-1 a) above within the County, that would generate an equivalent amount of solar power for the remaining term of the 30-year period. The same Covenant must be recorded against the property on which the new building with the replacement solar unit is located for the remaining term of the 30-year period and the property owner shall notify the HOA and County of the recordation of the Covenant prior to the vacation, abandonment, or demolition of the existing building.

Funds must be set aside for repairing or replacing solar panels if such costs are not subject to reimbursement from the property owner's insurance policy or warranty. The set-aside funds may also be used to enforce the provisions of the Covenant and any insurance claim if needed and may be used by the County should it decide to enforce the obligations of the property owner.

Prior to the issuance of the first grading permit for the Project, the PDS Director shall receive a copy of the report described in c) that demonstrates the mitigation measures have been performed and are quantified using appropriate, accurate, and conservative methodologies that account for the amount of GHG emissions that will be reduced by the installation of such panels. The report also verifies that if such GHG reductions may be reversed, mechanisms are in place to replace any reversed GHG emission reductions to ensure that all credited reductions endure for the 30-year period.

2.7.5.1 *Potential Subsequent Environmental Impacts Related to Mitigation Measure Implementation and CEQA Exemption*

ConSol 2023 (Attachment B to Appendix J1) also provides details as to what would be necessary to supply the remaining portion of CO_2e mitigation. ConSol documents that a 1MW system within the County could be expanded to reduce total Project emissions to Zero MT CO_2e. They found that operations of a 1MW solar array would create 1,645 MWh annually and would require as much as 83,000 s.f. of roof space to install the system.

GHG modeling was conducted for a 1 MW off-site system to determine the estimated construction and operational emissions.

The off-site installation would require delivery of panels which would take as many as six loaded semi delivery trucks during construction. The model also assumes a crew of nine people to install systems over a period of one month. Construction emissions during that one month would generate 4.72 MT CO_2e and after a 30-year amortization, would generate 0.16 MT CO_2e annually. Operationally, the system would avoid 603.61 MT CO_2e annually. Therefore, total avoidance after construction would be 603.45 MT CO_2e (603.61 minus 0.16) annually per MW, or 0.60345 MT CO_2e annually per kW of solar installed.

The construction-period crews and activities are provided for context. These actions would be short-term in nature and overall minimal relative to area ADT. Relative to GHG effects, as noted above, not only would the full CO_2e impacts be mitigated, but in fact, the energy use avoidance would be over the initial savings of 0.60345 MT CO_2e per kW of solar installed. Moreover, the installation of such PV system shall be required to qualify for a CEQA exemption at the time of application for such installation.

The installation of such PV system will be required to qualify for a CEQA exemption, such as for a ministerial action pursuant to County Zoning Code Section 6954, Solar Energy System for on-site uses, or under PRC 21080.35. It is considered an "on-site" use as the solar installed during mitigation measure implementation would primarily serve the building it is installed upon. (Because a commercial/industrial building is proposed, it is acknowledged that if the business has a slated closure day during the week energy generated on that day could go directly onto the grid, to the benefit of off-site users.) Section 6954 allows these systems as accessory uses by right on commercial, industrial, agricultural and other uses, as long as they comply with: setback and height thresholds, applicable special area regulations, and specifics of the panel manufacturer and model is provided in the building permit. These conditions would be satisfied and confirmed through plan check as opposed to new analysis.

PRC 21080.35 does not require preparation of environmental analysis for the installation of a solar energy system on the roof of an existing building or at an existing parking lot. Exclusions from the exemption relate to placement of equipment associated with one of the following:

> *(d.1) An individual federal permit pursuant to Section 401 or 404 of the federal Clean Water Act (33 U.S.C. Sec. 1341 or 1344) or waste discharge requirements pursuant to the Porter-Cologne Water Quality Control Act (Division 7 (commencing with Section 13000) of the Water Code).*
>
> *(d.2) An individual take permit for species protected under the federal Endangered Species Act of 1973 (16 U.S.C. Sec. 1531 et seq.) or the California Endangered Species Act (Chapter 1.5 (commencing with Section 2050) of Division 3 of the Fish and Game Code).*
>
> *(d.3) A streambed alteration permit pursuant to Chapter 6 (commencing with Section 1600) of Division 2 of the Fish and Game Code.*
>
> *(e) This section does not apply if the installation of a solar energy system at an existing parking lot involves either of the following:*
>
> *(e.1) The removal of a tree required to be planted, maintained, or protected pursuant to local, state, or federal requirements, unless the tree dies and there is no requirement to replace the tree.*
>
> *(e.2) The removal of a native tree over 25 years old.*
>
> *(f) This section does not apply to any transmission or distribution facility or connection.*

In this instance, the proposed solar mitigation would be installed upon an existing building on existing impervious surface with associated drainage improvements. No impact to stream courses or water resources would occur. No take permits for species protected under the federal ESA or California ESA are anticipated. Similarly, no trees at all would be removed. Finally, the Project proposes installation of PV panels to a building already on the electrical grid—no modified transmission, distribution, or connection facilities would be required. As such, consistent with PRC 21080.35, the Project mitigation would be exempt from CEQA environmental analysis. Visual effects associated with panel implementation would be less than notable. Modern panels are not largely reflective, and they would be placed in a developed setting. Potential biological effects

would be minor as actions would take place within developed areas and within a limited timeframe for construction, after which installation effects would be relatively passive. Runoff numbers would not be expected to change as impervious surfaces over which the panels would be installed would remain impervious. Should any of these assumptions not apply, the PV system would need to qualify for another CEQA exemption or be relocated to where a CEQA exemption would apply. The County will review the Project's compliance with this mitigation measure before the issuance of the first grading permit for the Project.

Taking into consideration an amortized impact of 0.16 MT CO_2e annually for installation of the panels, followed by an annual operational offset of a minimum of 603.45 MT CO_2e, this is a conservative approach.

2.7.6 Conclusion

The Project Applicant proposes to offset all Project GHG emissions, related to both construction and operations, to net zero. The Project Applicant(s) has responded to the California Court of Appeal decision with proposed modifications to the Project's GHG reduction measures. The Project would offset 100 percent of the Project's GHG emissions with the implementation of previously identified PDFs, updated as applicable, and a new mitigation measure (M-GHG-1) consistent with CARB's 2022 Scoping Plan, Appendix "D" Local Actions.

This analysis uses a different strategy to mitigate GHG emissions from the 2018 FEIR, which focused on strategies to reduce or offset electrical and natural gas emissions using solar within the Project site and purchase of off-site GHG reduction credits for remaining Project emissions. The current Project maximizes on-site GHG reductions (i.e., increased and more efficient photovoltaic solar panels) and any remaining GHG emissions that cannot be fully reduced to zero on site would be mitigated using solar installed on existing facilities off the Project site within San Diego County. This is possible because all relevant GHG emissions equate to CO_2e values which may be generated from any source including electrical, area, mobile, waste, water, and generator uses. The goal is to reduce any Project-generated net increase in GHG emissions with reductions or avoidances in GHG emissions elsewhere in the County based on the requirements specified in the CEQA statute, CEQA Guidelines, and case law – i.e., mitigating at locations not otherwise required (CEQA Guidelines Section 15126.4[c][3]), through enforceable measures (CEQA Guidelines Section 15126.4[a][2]), and supported by substantial evidence, etc. The mitigated Project would not generate GHG emissions that may have a significant impact on the environment because the mitigated Project would have no net increase in GHG emissions, as compared to the existing environmental setting (CEQA Guidelines Section 15064.4[b][1]). Because the mitigated Project would have no net increase in the GHG emissions level, the mitigated Project would not make a cumulatively considerable contribution to global GHG emissions.

Relative to plan consistency, the Project Applicant(s) shall be conditioned to implement the PDFs and Mitigation Measure identified in this report. Upon installation of M-GHG-1 discussed above, GHG emissions from all Project sources would be net zero and would therefore be consistent with the Project-specific GHG threshold of zero GHG emissions. Therefore, the Project would not conflict with any federal, state or County applicable plans, policies or regulations adopted for the purposes of reducing GHGs. Nor would it change the other sections of the FEIR since GHG emissions from all Project sources would still remain at net zero.

Table 2.7-1
GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIMES OF COMMON GHGs

Greenhouse Gas	Atmospheric Lifetime (Years)	100-year GWP[1]
Carbon Dioxide (CO_2)	50-200	1
Methane (CH_4)	12	25
Nitrous oxide (N_2O)	114	298
HFC-134a[2]	14	1,430
PFC[3]: Tetrafluoromethane (CF_4)	50,000	7,390
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Source: IPCC 2007
[1] GWPs are calculated over 100-year time horizon.
[2] HFC = hydrofluorocarbon, PFC = perfluorocarbon

Table 2.7-2
PROJECT COMPONENT ASSUMPTIONS

Land Use Type	Land Use Subtype	Size	Metric
Residential	Single Family Housing	193	Dwelling Unit
Residential	Multi-Family Housing	260	Dwelling Unit
Retail	Strip Mall	5	1,000 square feet
Roadway	New Road Construction	2.2	Miles
Parking	Center House Parking Lot	46	Spaces
Recreational	City Park	1.5	Acres

Table 2.7-3
EXPECTED CONSTRUCTION EQUIPMENT

Equipment Identification	Proposed Start	Proposed Complete	Quantity
Site Preparation	10/09/2025	01/07/2026	
Crushing/Proc. Equipment			1
Rubber Tired Dozers			3
Tractors/Loaders/Backhoes			4
Backbone infrastructure	01/08/2026	07/08/2026	
Forklifts			1
Off-Highway Trucks			2
Other Material Handling Equipment			1
Tractors/Loaders/Backhoes			1
Trencher			1
Roadway Construction	01/08/2026	07/08/2026	
Crawler Tractor			1
Excavators			3
Grader			1
Rollers			2
Rubber Tired Loader			1
Scrapers			2
Signal Boards			4
Tractors/Loaders/Backhoes			2
Grading	07/09/2026	10/07/2026	
Excavators			2
Grader			1
Rubber Tired Dozer			1
Scrapers			2
Tractors/Loaders/Backhoes			2
Bridge Construction	07/09/2026	07/09/2027	
Cranes			2
Forklift			1
Generator Sets			2
Pump			1
Tractors/Loaders/Backhoes			3
Building Construction	10/09/2026	01/10/2029	
Crane			1
Forklifts			3
Generator Set			1
Tractors/Loaders/Backhoes			3
Welder			1
WTWRF Building Construction	10/9/2026	3/10/2027	
Crane			1
Forklifts			3
Tractors/Loaders/Backhoes			3
Welder			1
On-site Solar Construction	3/1/2028	3/1/2029	
Aerial Lifts			1
Rough Terrain Forklifts			1

Table 2.7-3 (cont.)
EXPECTED CONSTRUCTION EQUIPMENT

Equipment Identification	Proposed Start	Proposed Complete	Quantity
Architectural Coating	08/09/2028	01/08/2029	
Air Compressors			1
Paving	08/09/2028	01/08/2029	
Pavers			2
Paving Equipment			2
Rollers			2

Note: Equipment hours of operation and duration, worker trips, etc. are provided in EIR Appendix J1, Attachment A (see Section 3.0 of the modeling output).

Table 2.7-4
ESTIMATED CONSTRUCTION CO_2E EMISSIONS SUMMARY

Year	Bio-CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	CO_2e
2025	0.00	122.04	122.04	0.03	0.00	122.91
2026	0.00	1,518.07	1,518.07	0.3632	0.0209	1,533.39
2027	0.00	1,137.97	1,137.97	0.1427	0.0419	1,154.02
2028	0.00	841.62	841.62	0.13	0.03	853.12
2029	0.00	37.45	37.45	0.01	0.00	37.92
Project Total (MT CO_2e)						**3,701.36**
Annualized Emission Increase over 30 years (MT CO_2e per Year)						**123.38**

Note: Expected construction emissions are based upon CalEEMod modeling for equipment listed in Table 2.7-3, above.

Table 2.7-5
ESTIMATED 2030 ANNUAL GHG EMISSIONS SUMMARY (MT/YEAR) WITH PROJECT DESIGN FEATURES AND STATE AND FEDERAL MANDATES

Source	CO_2e (MT/Yr)
Area	5.63
Electrical	461.83
Mobile	2,846.07
Waste	132.5
Water	84.19
Diesel Generators	14.14
Annual Emissions Total (Includes all PDFs not shown below)	3,544.36
Amortized Construction	123.38
Emissions including all PDFs excluding post-processed PDFs below	**3,667.74**
2018 PDF 10R (Install 8 EV Charging Stations at the Center House)	-38.14
2024 PDF 10R (Install EV Chargers in all 453 Garages)	-257.52
2024 PDF 13R (On-site Installed Residential Solar – 4,615kW or 11,570 360 W panels)	-2,310.39
2018 PDF 21 (Install 2,045 Trees)	-23.97
2024 PDF 27 Natural Gas is not designed within this Project	0
2024 PDF 28 – On-site Project Installed Solar on the Center House (no credit taken)	0
PDFs Emission Totals	**-2,632.32**
Project Emissions Summary (All PDFs identified in Section 2.7.2.2 included)	**1,037.72**

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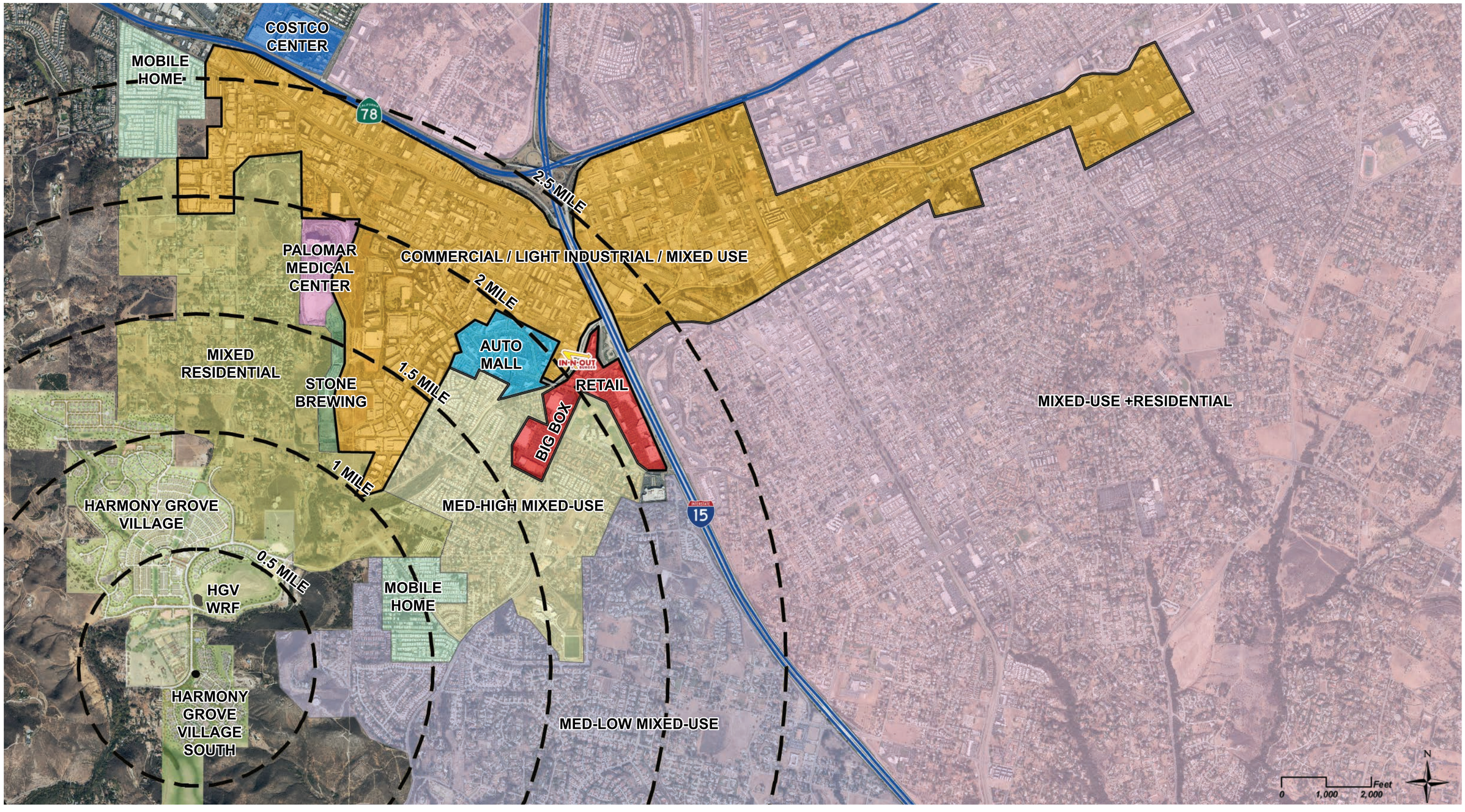

Source: Project Design Consultants, 2018

HGV + HGV South Adjacent Land Uses

HARMONY GROVE VILLAGE SOUTH

Figure 2.7-1

HELIX Environmental Planning