

2.4 Greenhouse Gas Emissions

This section addresses potential global climate change impacts resulting from the greenhouse gas (GHG) emissions associated with implementation of The Villages – Escondido Country Club Project (Project). The analysis is based on the review of existing resources, technical data, and applicable laws, regulations, and guidelines, as well as the Greenhouse Gas Emissions Technical Report prepared by Dudek (Appendix 2.4-1 to this Draft Environmental Impact Report (EIR)). Other information presented in this section was obtained from the Project applicant, the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 (CAPCOA 2016), and best engineering judgment.

2.4.1 Existing Conditions

The Project site is located in the northwest portion of the City of Escondido (City), along both sides of West Country Club Lane west of Nutmeg Street. The Project site itself currently has an address of 1800 West Country Club Lane and consists of approximately 109 acres. Figures 1-1 and 1-2 of this EIR show the Project location within the County of San Diego (County) and the City. The Project is located in the northwest part of Escondido. Regionally, the City is situated in northern San Diego County, about 30 miles north of downtown San Diego via Interstate 15 (I-15). The Project site is approximately 0.5 miles to the west of I-15 and about 2 miles north of State Route 78 (SR-78). The City of San Marcos boundary is approximately 0.2 miles to the southwest.

The Project is located within the San Diego Air Basin and is within the jurisdictional boundaries of the San Diego Air Pollution Control District. The San Diego Air Basin and San Diego Air Pollution Control District are discussed further in Section 2.1, Air Quality, of this EIR.

2.4.1.1 Environmental Setting

Climate Change Overview

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind patterns, lasting for an extended period of time (decades or longer). The Earth's temperature depends on the balance between energy entering and leaving the planet's system. Many factors, both natural and human, can cause changes in Earth's energy balance, including variations in the sun's energy reaching Earth, changes in the reflectivity of Earth's atmosphere and surface, and changes in the greenhouse effect, which affects the amount of heat retained by Earth's atmosphere (EPA 2017a).

The “greenhouse effect” is the trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect traps heat in the troposphere through a threefold process as follows: short-wave radiation emitted by the Sun is absorbed by the Earth,

the Earth emits a portion of this energy in the form of long-wave radiation, and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature and creates a pleasant, livable environment on the Earth. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise.

The scientific record of the Earth's climate shows that the climate system varies naturally over a wide range of time scales and that, in general, climate changes prior to the Industrial Revolution in the 1700s can be explained by natural causes, such as changes in solar energy, volcanic eruptions, and natural changes in GHG concentrations. Recent climate changes, in particular the warming observed over the past century, however, cannot be explained by natural causes alone. Rather, it is extremely likely that human activities have been the dominant cause of that warming since the mid-twentieth century and that they are the most significant driver of observed climate change (IPCC 2013; EPA 2017a). Human influence on the climate system is evident from the increasing GHG concentrations in the atmosphere, positive radiative forcing, observed warming, and improved understanding of the climate system (IPCC 2013). The atmospheric concentrations of GHGs have increased to levels unprecedented in the last 800,000 years, primarily from fossil fuel emissions and secondarily from emissions associated with land use changes (IPCC 2013). Continued emissions of GHGs will cause further warming and changes in all components of the climate system, which is discussed further in Section 2.4.1.3, Climate Change Conditions and Inventories, under "Potential Effects of Climate Change."

Greenhouse Gases

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code Section 38505(g), for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃) (see also 14 CCR 15364.5).¹ Some GHGs, such as CO₂, CH₄, and N₂O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Of these gases, CO₂ and CH₄ are emitted in the greatest quantities from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO₂, include fluorinated gases, such as HFCs, PFCs, and SF₆, which are associated with certain industrial products and processes. The following paragraphs

¹ Climate forcing substances include GHGs and other substances such as black carbon and aerosols. This discussion focuses on the seven GHGs identified in California Health and Safety Code Section 38505 because impacts associated with other climate forcing substances are not evaluated herein.

provide a summary of the most common GHGs and their sources.² For purposes of California Environmental Quality Act (CEQA) analysis for land use development projects, CalEEMod estimates emissions of CO₂, CH₄, and N₂O.

Carbon Dioxide. CO₂ is a naturally occurring gas and a by-product of human activities and is the principal anthropogenic (human-caused) GHG that affects the Earth's radiative balance. Natural sources of CO₂ include respiration of bacteria, plants, animals, and fungus; evaporation from oceans; volcanic out-gassing; and decomposition of dead organic matter. Human activities that generate CO₂ involve changes in land use and the combustion of fuels such as coal, oil, natural gas, and wood.

Methane. CH₄ is produced through both natural and human activities. CH₄ is a flammable gas and is the main component of natural gas. CH₄ is produced through anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Nitrous Oxide. N₂O is produced through natural and human activities, mainly through agricultural activities and natural biological processes, although fuel burning and other processes also create N₂O. Sources of N₂O include soil cultivation practices (microbial processes in soil and water), especially the use of commercial and organic fertilizers, manure management, industrial processes (such as in nitric acid production, nylon production, and fossil-fuel-fired power plants), vehicle emissions, and using N₂O as a propellant (such as in rockets, racecars, and aerosol sprays).

Fluorinated Gases. Fluorinated gases (also referred to as F-gases) are synthetic powerful GHGs emitted from many industrial processes. Fluorinated gases are commonly used as substitutes for stratospheric O₃-depleting substances (e.g., CFCs, hydrochlorofluorocarbons, and halons). The most prevalent fluorinated gases include the following:

- **Hydrofluorocarbons:** HFCs are compounds containing only hydrogen, fluorine, and carbon atoms. HFCs are synthetic chemicals used as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are used in manufacturing.
- **Perfluorocarbons:** PFCs are a group of human-made chemicals composed of carbon and

² The descriptions of GHGs are summarized from the Intergovernmental Panel on Climate Change's *Second Assessment Report* and *Fourth Assessment Report* (IPCC 1995, 2007), California Air Resources Board's *Glossary of Terms Used in GHG Inventories* (CARB 2015a), and U.S. Environmental Protection Agency's *Glossary of Climate Change Terms* (EPA 2016a).

fluorine only. These chemicals were introduced as alternatives, with HFCs, to ozone-depleting substances. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Because PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere, these chemicals have long lifetimes, ranging between 10,000 and 50,000 years.

- **Sulfur Hexafluoride:** SF₆ is a colorless gas soluble in alcohol and ether and slightly soluble in water. SF₆ is used for insulation in electric power transmission and distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection.
- **Nitrogen Trifluoride:** NF₃ is used in the manufacture of a variety of electronics, including semiconductors and flat panel displays.

Global Warming Potential

Gases in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo) (EPA 2016a). The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014). The reference gas used is CO₂; therefore, GWP-weighted emissions are measured in metric tons of CO₂ equivalent (MT CO₂E).

The current version of the CalEEMod (Version 2016.3.1) assumes that the GWP for CH₄ is 25 (so emissions of 1 MT of CH₄ are equivalent to emissions of 25 MT of CO₂), and the GWP for N₂O is 298, based on the Intergovernmental Panel on Climate Change's *Fourth Assessment Report* (IPCC 2007). The GWP values identified in CalEEMod were applied to the Project.

2.4.1.2 Regulatory Setting

Federal

Massachusetts v. EPA. In *Massachusetts v. EPA* (April 2007), the U.S. Supreme Court directed the U.S. Environmental Protection Agency (EPA) administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make

a reasoned decision. In December 2009, the administrator signed a final rule with the following two distinct findings regarding GHGs under Section 202(a) of the federal Clean Air Act:

- The Administrator found that elevated concentrations of GHGs—CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆—in the atmosphere threaten the public health and welfare of current and future generations. This is the “endangerment finding.”
- The Administrator further found the combined emissions of GHGs—CO₂, CH₄, N₂O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is the “cause or contribute finding.”

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

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

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

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

In 2010, President Barack Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In

response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO₂ in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking. On January 12, 2017, EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks (EPA 2017b).

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO₂ emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6%–23% over the 2010 baselines.

In August 2016, EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO₂ emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (EPA and NHTSA 2016).

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

On October 23, 2015, EPA published a final rule (effective December 22, 2015) establishing the carbon pollution emission guidelines for existing stationary sources: electric utility generating units (80 FR 64510–64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO₂ emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel-fired electric utility steam-generating units and (2) stationary combustion turbines. Concurrently, EPA published a final rule (effective October 23, 2015) establishing standards of performance for greenhouse gas emissions from new, modified, and reconstructed stationary sources: electric utility generating units (80 FR 64661–65120). The rule prescribes CO₂ emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the Clean Power Plan pending resolution of several lawsuits. Additionally, in March 2017, President Trump directed the EPA Administrator to review the Clean Power Plan in order to determine whether it is consistent with current executive policies concerning GHG emissions, climate change, and energy.

State

The statewide GHG emissions regulatory framework is summarized below by category: state climate change targets, building energy, renewable energy and energy procurement, mobile sources, solid waste, water, and other state regulations and goals. The following text describes executive orders, assembly bills, senate bills, and other regulations and plans that would directly or indirectly reduce GHG emissions.

State Climate Change Targets

Executive Order S-3-05. Executive Order (EO) S-3-05 (June 2005) established the following statewide goals: GHG emissions should be reduced to 2000 levels by 2010, GHG emissions should be reduced to 1990 levels by 2020, and GHG emissions should be reduced to 80% below 1990 levels by 2050.

Assembly Bill 32 and CARB's Climate Change Scoping Plan. In furtherance of the goals established in EO S-3-05, the Legislature enacted Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020.

Under AB 32, CARB is responsible for and is recognized as having the expertise to carry out and develop the programs and requirements necessary to achieve the GHG emissions reduction mandate of AB 32. Under AB 32, CARB must adopt regulations requiring the reporting and verification of statewide GHG emissions from specified sources. This program is used to monitor and enforce compliance with established standards. CARB also is required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 relatedly authorized CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted.

In 2007, CARB approved a limit on the statewide GHG emissions level for year 2020 consistent with the determined 1990 baseline (427 million metric tons (MMT) CO₂E). CARB's adoption of this limit is in accordance with Health and Safety Code Section 38550.

Further, in 2008, CARB adopted the *Climate Change Scoping Plan: A Framework for Change* (Scoping Plan) in accordance with Health and Safety Code Section 38561. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions for various emission sources/sectors to 1990 levels by 2020. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction features by both entities, identifies additional

measures to be pursued as regulations, and outlines the role of a cap-and-trade program. The key elements of the Scoping Plan include the following (CARB 2008):

1. Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards
2. Achieving a statewide renewable energy mix of 33%
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions
4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets
5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard
6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation

In the Scoping Plan, CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of approximately 28.5% from the otherwise projected 2020 emissions level; i.e., those emissions that would occur in 2020, absent GHG-reducing laws and regulations (referred to as "business as usual" (BAU)). For purposes of calculating this% reduction, CARB assumed that all new electricity generation would be supplied by natural gas plants, no further regulatory action would impact vehicle fuel efficiency, and building energy efficiency codes would be held at 2005 standards.

In the 2011 *Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document* (Final Supplement), CARB revised its estimates of the projected 2020 emissions level in light of the economic recession and the availability of updated information about GHG reduction regulations. Based on the new economic data, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7% (down from 28.5%) from the BAU conditions. When the 2020 emissions level projection also was updated to account for newly implemented regulatory measures, including Pavley I (model years 2009–2016) and the Renewables Portfolio Standard (RPS) (12% to 20%), CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16% (down from 28.5%) from the BAU conditions.

In 2014, CARB adopted the *First Update to the Climate Change Scoping Plan: Building on the Framework* (First Update). The stated purpose of the First Update is to “highlight California’s success to date in reducing its GHG emissions and lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80% below 1990 levels by 2050.” The First Update found that California is on track to meet the 2020 emissions reduction mandate established by AB 32, and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80% below 1990 levels by 2050 if the state realizes the expected benefits of existing policy goals.

In conjunction with the First Update, CARB identified “six key focus areas comprising major components of the state’s economy to evaluate and describe the larger transformative actions that will be needed to meet the state’s more expansive emission reduction needs by 2050.” Those six areas are (1) energy; (2) transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure); (3) agriculture; (4) water; (5) waste management; and (6) natural and working lands. The First Update identifies key recommended actions for each sector that will facilitate achievement of EO S-3-05’s 2050 reduction goal.

Based on CARB’s research efforts presented in the First Update, CARB has a “strong sense of the mix of technologies needed to reduce emissions through 2050.” Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies.

As part of the *i*, CARB recalculated the state’s 1990 emissions level using more recent global warming potentials identified by the Intergovernmental Panel on Climate Change. Using the recalculated 1990 emissions level (431 MMT CO₂E) and the revised 2020 emissions level projection identified in the 2011 Final Supplement, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15% (instead of 28.5% or 16%) from the BAU conditions.

On January 20, 2017, CARB released the *2017 Climate Change Scoping Plan Update* (Second Update) for public review and comment (CARB 2017a). This update proposes CARB’s strategy for achieving the state’s 2030 GHG target as established in Senate Bill (SB) 32 (discussed below); the strategy proposes to continue the Cap-and-Trade Program through 2030 and includes a new approach to reduce GHGs from refineries by 20%. The Second Update incorporates approaches to cutting short-lived climate pollutants (SLCPs) under the *Short-Lived Climate Pollutant Reduction Strategy* (SLCP Reduction Strategy; CARB 2017b), a planning document that was adopted by CARB in March 2017. The Second Update also acknowledges the need for reducing emissions in agriculture and highlights the work underway to ensure that California’s natural and working lands increasingly sequester carbon. CARB held a number of public

workshops in the Natural and Working Lands, Agriculture, Energy, and Transportation sectors to inform development of the Second Update (CARB 2016). When discussing project-level GHG emissions reduction actions and thresholds, the Second Update states “achieving no net increase in GHG emissions is the correct overall objective, but it may not be appropriate or feasible for every development project. An inability to mitigate a project’s GHG emissions to zero does not necessarily imply a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA.” It is expected that the Second Update will be considered by CARB’s Governing Board in late June 2017.

EO B-30-15. EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under EO S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing statewide GHG emissions to 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing statewide GHG emissions to 80% below 1990 levels by 2050 as set forth in EO S-3-05. 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 CO₂E. The executive order also calls for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets. Sector-specific agencies in transportation, energy, water, and forestry were required to prepare GHG reduction plans by September 2015, followed by a report on action taken in relation to these plans in June 2016. EO B-30-15 does not require local agencies to take any action to meet the new interim GHG reduction target.

SB 32 and AB 197. SB 32 and AB 197 (enacted in 2016) are companion bills that set a new statewide GHG reduction targets, make changes to CARB’s membership and increase legislative oversight of CARB’s climate change-based activities, and expand dissemination of GHG and other air quality-related emissions data to enhance transparency and accountability. More specifically, SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40% below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, in order to provide ongoing oversight over implementation of the state’s climate policies. AB 197 also added two members of the Legislature to CARB as nonvoting members; requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and toxic air contaminants from reporting facilities; and requires CARB to identify specific information for GHG emissions reduction measures when updating the *Scoping Plan*.

SB 605 and SB 1383. SB 605 (2014) requires CARB to complete a comprehensive strategy to reduce emissions of SLCPs in the state, and SB 1383 (2016) requires CARB to approve and implement that strategy by January 1, 2018. SB 1383 also establishes specific targets for the reduction of SLCPs (40% below 2013 levels by 2030 for CH₄ and HFCs, and 50% below 2013

levels by 2030 for anthropogenic black carbon), and provides direction for reductions from dairy and livestock operations and landfills. Accordingly, and as mentioned above, CARB adopted its SLCP Reduction Strategy in March 2017. The SLCP Reduction Strategy establishes a framework for the statewide reduction of emissions of black carbon, CH₄, and fluorinated gases.

Building Energy

California Code of Regulations, Title 24, Part 6. Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically establishes Building Energy Efficiency Standards that are designed to ensure new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. The California Energy Commission (CEC) is required by law to adopt standards every 3 years that are cost effective for homeowners over the 30-year lifespan of a building. These standards are updated to consider and incorporate new energy efficient technologies and construction methods. As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The 2013 Title 24 standards became effective on July 1, 2014. Buildings constructed in accordance with the 2013 standards were estimated to use 25% less energy for lighting, heating, cooling, ventilation, and water heating than the 2008 standards (CEC 2012). CalEEMod's default parameters assume compliance with the 2013 Title 24 standards.

The 2016 Title 24 standards are the currently applicable building energy efficiency standards, and became effective on January 1, 2017. The 2016 Title 24 standards will further reduce energy used and associated GHG emissions. In general, single-family homes built to the 2016 standards are anticipated to use about 28% less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards, and nonresidential buildings built to the 2016 standards will use an estimated 5% less energy than those built to the 2013 standards (CEC 2015a). The Project would be required to comply with 2016 Title 24 standards because its building construction phase would commence after January 1, 2017.

California Code of Regulations, Title 24, Part 11. In addition to CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen, and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted

mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential and state-owned buildings and schools and hospitals. The CALGreen 2016 standards became effective on January 1, 2017. The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance
- 65% of construction and demolition waste must be diverted from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency
- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle board

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15% improvement in energy requirements; stricter water conservation, 65% diversion of construction and demolition waste, 10% recycled content in building materials, 20% permeable paving, 20% cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30% improvement in energy requirements, stricter water conservation, 75% diversion of construction and demolition waste, 15% recycled content in building materials, 30% permeable paving, 25% cement reduction, and cool/solar-reflective roofs.

The California Public Utilities Commission (CPUC), CEC, and CARB also have a shared, established goal of achieving zero net energy (ZNE) for new construction in California. The key policy timelines include the following: (1) all new residential construction in California will be ZNE by 2020 and (2) all new commercial construction in California will be ZNE by 2030 (see CPUC 2013, for example).³ As most recently defined by CEC in its 2015 *Integrated Energy Policy Report*, a ZNE code building is "one where the value of the energy produced by on-site renewable energy resources is equal to the value of the energy consumed annually by the building" using CEC's Time Dependent Valuation metric (CEC 2015b).

³ It is expected that achievement of the ZNE goal will occur via revisions to the Title 24 standards.

California Code of Regulations, Title 20. Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. Performance of appliances must be certified through CEC to demonstrate compliance with standards. New appliances regulated under Title 20 include refrigerators, refrigerator-freezers, and freezers; room air conditioners and room air-conditioning heat pumps, central air conditioners, and spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwashers; clothes washers and dryers; cooking products; electric motors; low-voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing for each type of appliance covered under the regulations and appliances must meet the standards for energy performance, energy design, water performance, and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

SB 1. SB 1 (2006) established a \$3 billion rebate program to support the goal of the state to install rooftop solar energy systems with a generation capacity of 3,000 megawatts through 2016. SB 1 added sections to the California Public Resources Code, including Chapter 8.8 (California Solar Initiative), that require building projects applying for ratepayer-funded incentives for photovoltaic systems to meet minimum energy efficiency levels and performance requirements. Section 25780 established that it is a goal of the state to establish a self-sufficient solar industry in which solar energy systems are a viable mainstream option for both homes and businesses within 10 years of adoption, and to place solar energy systems on 50% of new homes within 13 years of adoption. SB 1, also termed “GoSolarCalifornia,” was previously titled “Million Solar Roofs.”

AB 1470. This bill established the Solar Water Heating and Efficiency Act of 2007. The bill makes findings and declarations of the Legislature relating to the promotion of solar water heating systems and other technologies that reduce natural gas demand. The bill defines several terms for purposes of the act. The bill requires the commission to evaluate the data available from a specified pilot program, and, if it makes a specified determination, to design and implement a program of incentives for the installation of 200,000 solar water heating systems in homes and businesses throughout the state by 2017.

AB 1109. Enacted in 2007, AB 1109 required CEC to adopt minimum energy efficiency standards for general purpose lighting, to reduce electricity consumption 50% for indoor residential lighting and 25% for indoor commercial lighting.

Mobile Sources

AB 1493. In response to the transportation sector accounting for more than half of California's CO₂ emissions, AB 1493 was enacted in July 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30%.

EO S-1-07. Issued on January 18, 2007, EO S-1-07 sets a declining Low Carbon Fuel Standard for GHG emissions measured in CO₂E grams per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020. The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel (including extraction/feedstock production, processing, transportation, and final consumption) per unit of energy delivered. CARB adopted the implementing regulation in April 2009. The regulation is expected to increase the production of biofuels, including those from alternative sources such as algae, wood, and agricultural waste.

SB 375. SB 375 (2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 required CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035. Regional metropolitan planning organizations are then responsible for preparing a Sustainable Communities Strategy (SCS) within their Regional Transportation Plan (RTP). The goal of the SCS is to establish a forecasted development pattern for the region that, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets. If an SCS is unable to achieve the GHG reduction target, a metropolitan planning organization must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to Government Code Section 65080(b)(2)(K), an SCS does not regulate the use of land; supersede the land use authority of cities and counties; or 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.

In 2010, CARB adopted the SB 375 targets for the regional metropolitan planning organizations. The targets for the San Diego Association of Governments (SANDAG) are a 7% reduction in emissions per capita by 2020 and a 13% reduction by 2035.

SANDAG completed and adopted its *2050 Regional Transportation Plan/Sustainable Communities Strategy* (2050 RTP/SCS; SANDAG 2011a) in October 2011. In November 2011, 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.

After SANDAG's 2050 RTP/SCS was adopted, a lawsuit was filed by the Cleveland National Forest Foundation and others. The matter currently is pending before the California Supreme Court (Case No. S223603) for determination of whether an EIR for an RTP must include an analysis of the plan's consistency with the GHG reduction goals reflected in EO S-3-05 to comply with CEQA.

Although the EIR for SANDAG's 2050 RTP/SCS is pending before the California Supreme Court, in 2015, SANDAG adopted the next iteration of its RTP/SCS in accordance with statutorily mandated timelines and no subsequent litigation challenge was filed. More specifically, in October 2015, SANDAG adopted *San Diego Forward: The Regional Plan* (Regional Plan). Like the 2050 RTP/SCS, this planning document meets CARB's 2020 and 2035 reduction targets for the region (SANDAG 2015). In December 2015, CARB, by resolution, accepted SANDAG's GHG emissions quantification analysis and determination that, if implemented, the Regional Plan would achieve CARB's 2020 and 2035 GHG emissions reduction targets for the region.

Advanced Clean Cars Program. In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB 2012). To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75% less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with EPA and NHTSA, has adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34% in 2025. The Zero Emissions Vehicle (ZEV) program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in the 2018 to 2025 model years. The Clean Fuels

Outlet regulation will ensure that fuels such as electricity and hydrogen are available to meet the fueling needs of the new advanced technology vehicles as they come to the market.

EO B-16-12. EO B-16-12 (2012) directs state entities under the Governor’s direction and control to support and facilitate development and distribution ZEVs. This executive order also sets a long-term target of reaching 1.5 million 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% less than 1990 levels by 2050. In furtherance of this executive order, the governor convened an Interagency Working Group on ZEVs that has published multiple reports regarding the progress made on the penetration of ZEVs in the statewide vehicle fleet.

AB 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 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 provides for appeal of that decision to the planning commission, as specified. 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 electric vehicle charging stations, as specified. The City of Escondido’s (City’s) population does not exceed 200,000, so this statute does not apply. Prior to this statutory deadline, in August 2016, the County of San Diego’s Board of Supervisors adopted Ordinance No. 10437 adding a section to its County Code related to the expedited processing of electric vehicle charging stations permits consistent with AB 1236.

SB 350. In 2015, SB 350—the Clean Energy and Pollution Reduction Act—was enacted into law. As one of its elements, SB 350 establishes a statewide policy for widespread electrification of the transportation sector, recognizing that such electrification is required for achievement of the state’s 2030 and 2050 reduction targets (see California Public Utilities Code, Section 740.12).

Renewable Energy and Energy Procurement

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

SB 1368. SB 1368 (2006) requires CEC to develop and adopt regulations for GHG emission performance standards for the long-term procurement of electricity by local publicly owned utilities. These standards must be consistent with the standards adopted by CPUC. This effort

will help protect energy customers from financial risks associated with investments in carbon-intensive generation by allowing new capital investments in power plants whose GHG emissions are as low as or lower than new combined-cycle natural gas plants by requiring imported electricity to meet GHG performance standards in California and by requiring that the standards be developed and adopted in a public process.

SB X1 2. SB X1 2 (2011) expanded the RPS by establishing that 20% of the total electricity sold to retail customers in California per year by December 31, 2013, and 33% 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 energy, 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 350. SB 350 (2015) further expanded the RPS by establishing that 50% of the total electricity sold to retail customers in California per year by December 31, 2030, should 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. The bill also requires CPUC, in consultation with CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal.

Water

EO B-29-15. In response to the ongoing drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25% relative to water use in 2013. The term of the executive order extended through February 28, 2016, although many of the directives have since become permanent water-efficiency standards and requirements. The executive order includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources has modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Solid Waste

AB 939 and AB 341. In 1989, AB 939, known as the Integrated Waste Management Act (California Public Resources Code Section 40000 et seq.), was passed because of the increase in

waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25% by 1995 and 50% by the year 2000.

AB 341 (2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75% of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle has conducted multiple workshops and published documents that identify priority strategies that CalRecycle believes would assist the state in reaching the 75% goal by 2020.

Increasing the amount of commercial solid waste that is recycled, reused, or composted will reduce GHG emissions, primarily by reducing the energy requirements associated with the extraction, harvest, and processing of raw materials and by using recyclable materials that require less energy than raw materials to manufacture finished products (CalRecycle 2015). Increased diversion of organic materials (green and food waste) will also reduce GHG emissions (CO₂ and CH₄) resulting from decomposition in landfills by redirecting this material to processes that use the solid waste material to produce vehicle fuels, heat, electricity, or compost.

Other State Regulations and Goals

California Environmental Quality Act

Primary environmental legislation in California is found in CEQA and its implementing guidelines (CEQA Guidelines), which require that projects with potential adverse effects (or impacts) on the environment undergo environmental review. Adverse environmental impacts are typically mitigated as a result of the environmental review process in accordance with existing laws and regulations.

EO S-13-08. EO Order S-13-08 (November 2008) is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. Therefore, the executive order directs state agencies to take specified actions to assess and plan for such impacts. The final *2009 California Climate Adaptation Strategy* report was issued in December 2009 (CNRA 2009a), and an update, *Safeguarding California: Reducing Climate Risk*, followed in July 2014 (CNRA 2014). To assess the state's vulnerability, the report and its update summarize key climate change impacts to the state for the following areas: agriculture, biodiversity and habitat, emergency management, energy, forestry, ocean and coastal ecosystems and resources, public health, transportation, and water resources.

2015 State of the State Address. In January 2015, in his inaugural address and annual report to the Legislature, Governor Brown established supplementary goals that would further reduce GHG emissions over the next 15 years. These goals include an increase in California's renewable energy portfolio from 33% to 50%, a reduction in petroleum use for cars and trucks by up to 50%, measures to double the efficiency of existing buildings, and decreasing emissions associated with heating fuels.

2016 State of the State Address. In his January 2016 address, Governor Brown established a statewide goal to bring per capita GHG emission down to two tons per person, which reflects the goal of the *Global Climate Leadership Memorandum of Understanding* (Under 2 MOU) to limit global warming to less than 2°C (3.6°F) by 2050. The Under 2 MOU agreement pursues emission reductions of 80% to 95% below 1990 levels by 2050 and/or reach a per capita annual emissions goal of less than 2 MT by 2050. A total of 135 jurisdictions representing 32 countries and 6 continents have signed or endorsed the Under 2 MOU (Under 2 Coalition 2016), including California.

Carbon Offsets

Under AB 32 (described above), CARB implemented a Cap-and-Trade program in which regulated entities must either reduce their emissions to a specified level each year or purchase compliance offsets to reach that level. Under this program, CARB has approved offset project registries that can provide offsets under the program. CARB also has developed offset protocols that guide what constitutes an offset and a project. CARB-approved registries include, but are not necessarily limited to, the American Carbon Registry, Climate Action Reserve, and Verified Carbon Standard. In concert with AB 32, the protocols require that offsets must be real, additional, permanent, verifiable, and enforceable.

For purposes of this environmental analysis, CEQA Guidelines Section 15126.4(c)(3) states that “measures to mitigate the significant effects of GHG emissions may include, among others: Off-site measures including offsets that are not otherwise required, to mitigate a project’s emissions” (14 CCR 15126.4(c)(3)).

Local

Escondido Climate Action Plan

The *City of Escondido Adopted Climate Action Plan* (E-CAP), adopted December 4, 2013, establishes a target of reducing GHG emissions within the City by 15% below existing emissions levels by 2020. Accordingly, the E-CAP is intended to reduce 26,807 MT CO₂E per year from new development by 2020 within the City as compared with the 2020 unmitigated conditions

(City of Escondido 2013a). Reductions of GHG emissions within the E-CAP are designed to achieve the state's adopted AB 32 GHG reduction target.

Under the E-CAP, new projects within the City are first screened to determine whether E-CAP reduction measures are required. The E-CAP established guidance requiring a 2,500 MT CO₂E screening threshold for all small commercial, residential, and light industrial projects. Projects that do not exceed the 2,500 MT CO₂E screening threshold would be considered to have a “less than significant GHG emissions impact” under the E-CAP.

Projects that are anticipated to generate more than 2,500 MT CO₂E are required to use the screening tables to demonstrate compliance with the E-CAP. The E-CAP's screening tables provide guidance in measuring the reduction of GHG emissions attributed to certain design and construction measures incorporated into development projects (City of Escondido 2013b). The screening tables assign points for each option incorporated into a project as mitigation measure or a project design feature (PDF). Point values correspond with the minimum emissions reduction that is expected from each feature. If a project achieves a minimum of 100 points, it would be considered consistent with the reduction quantities anticipated in the E-CAP. Projects that exceed 100 points do not require project-specific emissions to be quantified.

It should be noted that the E-CAP is not a certified GHG reduction plan beyond 2020. The E-CAP acknowledges that 2020 is only a milestone in the City's GHG emissions reduction planning and that additional planning for post-2020 is required. The E-CAP indicates that the post-2020 E-CAP would include a specific target for GHG reductions for 2035 and 2050 and states that “The targets would be consistent with broader state and federal reduction targets and with the scientific understanding of the needed reductions by 2050” (City of Escondido 2013a). For the E-CAP to be a certified GHG reduction plan beyond 2020, it will have to incorporate reduction measures that align with SB 32 and EO S-3-05. As stated in the E-CAP, the E-CAP update process is expected to commence in 2017 at which point the City would incorporate updated land-use and demographic inputs based on changes within the City since the last E-CAP revision.

San Diego Forward: The Regional Plan

On October 9, 2015, the SANDAG Board of Directors adopted the Regional Plan, which has united two of SANDAG's major planning efforts into one with the next update of the RTP/SCS and an update of the Regional Comprehensive Plan (RCP) that was adopted in 2004. The goals of the Regional Plan are to provide innovative mobility choices and planning to support a sustainable and healthy region, a vibrant economy, and an outstanding quality of life for all. These goals are outlined in policy objectives in the Regional Plan that include habitat and open space preservation, regional economic prosperity, environmental stewardship, mobility choices, partnerships/collaborations, and healthy and complete communities.

City of Escondido General Plan

The City's General Plan (City of Escondido 2012) includes various goals and policies designed to help result in a reduction in GHG emissions. As discussed in the General Plan, climate change and GHG reduction policies are addressed in multiple chapters of the General Plan.

The goals and policies for reduction of GHG emissions in the General Plan are as follows:

Land Use and Community Form

1. Community Character

Goal 1: A community composed of distinct residential neighborhoods, business districts, and employment centers, whose urban form reflects the natural environmental setting.

Community Character Policy 1.8: Require development projects to locate and design buildings, construct energy and water efficient infrastructure, reduce greenhouse gas emissions, enhance community livability and economic vitality, and implement other practices contributing to sustainable resources.

Community Character Policy 1.9: Promote development in downtown, at transit stations, and other key districts to accommodate a mix of land uses and configure uses to promote walkability, bicycling, and transit uses, reducing the need for the automobile.

4. Neighborhood Maintenance & Preservation

Goal 4: Residential neighborhoods that are well-maintained and enduring, and continue to be great places to live for multiple generations.

Neighborhood Maintenance & Preservation Policy 4.3: Integrate pedestrian-friendly features, promote walkability, and work with residents to enhance existing neighborhood character and aesthetics.

7. Mixed Use Overlay Zones

Goal 7: Districts containing a mix of uses enabling residents to live close to their jobs, shopping, entertainment, and recreation, reducing the need to use the automobile and promoting walking and healthy lifestyles.

Mixed Use Overlay Policy 7.1: Designate areas for the development of mixed-use projects in a pedestrian-friendly environment integrating housing with retail, office,

and service uses (childcare, health, etc.) consistent with the General Plan's vision and long-term growth needs.

Mobility and Infrastructure

1. Regional Transportation Planning

Goal 1: An accessible, safe, convenient, and integrated multi-modal network that connects all users and moves goods and people within the community and region efficiently.

3. Pedestrian Network

Pedestrian Network Policy 3.2: Develop and manage pedestrian facilities to maintain an acceptable Level of Service as defined in the Pedestrian Master Plan.

Pedestrian Network Policy 3.3: Maintain a pedestrian environment that is accessible to all and that is safe, attractive, and encourages walking.

4. Bicycle Network

Bicycle Network Policy 4.2: Develop and manage bicycle facilities to maintain an acceptable Level of Service as defined in the Bicycle Master Plan.

Bicycle Network Policy 4.3: Promote bicycling as a common mode of transportation and recreation to help reduce traffic congestion and improve public health.

12. Water System

Goal 2: Adequate and sustainable infrastructure and water supply to serve a community that values and conserves water.

Water System Policy 12.12: Require new development to incorporate water conservation techniques into building and site design incorporating such elements as water efficient fixtures (e.g., low flow shower heads); drought-tolerant landscape, permeable hardscapes, and on-site stormwater capture and re-use facilities.

13. Wastewater System

Goal 3: Provision of adequate and sustainable wastewater infrastructure to serve residents, businesses and property.

Wastewater System Policy 13.11: Explore alternative wastewater technologies and best practices that reduce the amount of wastewater requiring treatment. Require new

development to implement appropriate and feasible systems that reduce the amount of wastewater requiring treatment.

14. Storm Drainage

Goal 4: Provision of adequate and sustainable infrastructure that is environmentally sensitive to serve residents, businesses, and property.

Storm Drainage Policy 14.4: Require new development to create a mechanism to finance and fund ongoing maintenance of stormwater facilities.

Storm Drainage Policy 14.5: Require new development to prepare drainage studies and improvement plans that demonstrate no net increase in stormwater runoff and compliance with adopted stormwater plans.

16. Energy

Goal 6: An increased use of renewable energy sources, and improved energy conservation and efficiency.

Energy Policy 16.4: Encourage site and building design that reduces exterior heat gain and heat island effects (tree planting, reflective paving materials, covered parking, cool roofs, etc.).

Energy Policy 16.5: Require, to the extent feasible, building orientations and landscaping that use natural lighting to reduce energy demands.

Resource Conservation

7. Air Quality and Climate Protection

Goal 7: Improved air quality in the city and the region to maintain the community's health and reduce greenhouse gas emissions that contribute to climate change.

Air Quality and Climate Protection Policy 7.3: Require that new development projects incorporate feasible measures that reduce construction and operational emissions.

2.4.1.3 Climate Change Conditions and Inventories

Sources of Greenhouse Gas Emissions

Global Inventory

Anthropogenic GHG emissions worldwide in 2012 (the most recent year for which data is available) totaled approximately 44,816 MMT CO₂E (WRI 2015). Six countries—China, the

United States, the Russian Federation, India, Japan, and Brazil—and the European Union accounted for approximately 65% of the total global emissions, approximately 29,300 MMT CO₂E (WRI 2015). Table 2.4-1, Six Top GHG-Producing Countries and the European Union, presents the top GHG-emissions-producers.

National and State Inventories

Per the EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2014 (2016b), total GHG emissions in the United States were approximately 6,870.5 MMT CO₂E in 2014. The primary GHG emitted by human activities in the United States was CO₂, which represented approximately 80.9% of total GHG emissions (5,556.0 MMT CO₂E) for that year. The largest source of CO₂, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 93.7% of CO₂ emissions in 2014 (5,208.2 MMT CO₂E). Total GHG emissions in the United States have increased by 7.4% from 1990 to 2014, and emissions increased by 1.0% from 2013 to 2014 (70.5 MMT CO₂E). Since 1990, GHG emissions have increased in the United States at an average annual rate of 0.3%; however, overall, net emissions in 2014 were 8.6% below 2005 levels (EPA 2016b).

According to California’s 2000–2014 GHG emissions inventory (2016 edition), California emitted 441.5 MMT CO₂E in 2014, including emissions resulting from out-of-state electrical generation (CARB 2016). The sources of GHG emissions in California include transportation, industry, electric power production from both in-state and out-of-state sources, residential and commercial activities, agriculture, high GWP substances, and recycling and waste. The California GHG emission source categories and their relative contributions in 2014 are presented in Table 2.4-2, GHG Emissions Sources in California.

During the 2000 to 2014 period, per-capita GHG emissions in California have continued to drop from a peak in 2001 of 13.9 MT per person to 11.4 MT per person in 2014, representing an 18% decrease. In addition, total GHG emissions in 2014 were 2.8 MMT CO₂E less than 2013 emissions.

City of Escondido Inventory

The E-CAP includes GHG inventories of community-wide and municipal sources for the year 2010. Escondido’s 2010 inventory amounted to 886,118 MT CO₂E from community-wide sources and 18,143 MT CO₂E from municipal operations (City of Escondido 2013a). Following the state’s adopted AB 32 GHG reduction target, Escondido set a goal to reduce emissions back to 1990 levels by the year 2020. This target was calculated as a 15% reduction from 2005 levels, as recommended in the AB 32 Scoping Plan.

The estimated community-wide emissions for the year 2020, based on population and housing growth projections associated with the assumptions used in the proposed General Plan Update, are 992,583 MT CO₂E. To reach the reduction target, Escondido must offset this growth in emissions and reduce community-wide emissions to 788,176 MT CO₂E by the year 2020.

Table 2.4-3, E-CAP 2010 and 2020 GHG Emissions, summarizes the E-CAP's community-wide emissions for 2010, 2020, and the reduced 2020 inventory with the inclusion of the proposed reduction measures outlined in the E-CAP. As shown in Table 2.4-3, the E-CAP exceeds the City's 15% reduction set forth for 2020 with the state and local GHG emissions reduction measures.

Table 2.4-4, E-CAP 2010 and 2035 GHG Emissions, summarizes the E-CAP's 2035 emissions for Escondido based on the anticipated growth rates included in Escondido's General Plan update and the 2035 reduced inventory, which includes the reduction measures outlined in the E-CAP as well as the assumption that the current statewide measures are extended beyond 2020.

Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The 2014 *Intergovernmental Panel on Climate Change Synthesis Report* (IPCC 2014) indicated that warming of the climate system is unequivocal and many of the observed changes since the 1950s are unprecedented. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, rising sea levels, and ocean acidification (IPCC 2014).

In California, climate change impacts have the potential to affect sea-level rise, agriculture, snowpack and water supply, forestry, wildfire risk, public health, frequency of severe weather events, and electricity demand and supply. The primary effect of global climate change has been a 0.2°C (3.6°F) rise in average global tropospheric temperature per decade, determined from meteorological measurements worldwide between 1990 and 2005. Scientific modeling predicts that continued emissions of GHGs at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. A warming of about 0.2°C (0.36°F) per decade is projected, and there are identifiable signs that global warming could take place.

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. The average temperatures in California have increased, leading to more extreme hot days and fewer cold nights. Shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year. Sea levels have

risen, and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010).

An increase in annual average temperature is a reasonably foreseeable effect of climate change. Observed changes over the last several decades across the western United States reveal clear signals of climate change. Statewide average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada (CCCC 2012). By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1°F to 8.6°F, depending on emissions levels. Springtime warming—a critical influence on snowmelt—will be particularly pronounced. Summer temperatures will rise more than winter temperatures, and the increases will be greater in inland California, compared to the coast. Heat waves will be more frequent, hotter, and longer. There will be fewer extremely cold nights (CCCC 2012). A decline of Sierra Nevada snowpack, which accounts for approximately half of the surface water storage in California, by 30% to as much as 90% is predicted over the next 100 years (CAT 2006).

Model projections for precipitation over California continue to show the Mediterranean pattern of wet winters and dry summers with seasonal, year-to-year, and decade-to-decade variability. For the first time, however, several of the improved climate models shift toward drier conditions by the mid-to-late twenty-first century in central, and most notably, Southern California. By the late century, all projections show drying, and half of them suggest 30-year average precipitation will decline by over 10% below the historical average (CCCC 2012).

A summary of current and future climate change impacts to resource areas in California, as discussed in *Safeguarding California: Reducing Climate Risk* (CNRA 2014), is provided Appendix 2.4-1, Greenhouse Gas Emissions Technical Report.

2.4.2 Analysis of Project Effects and Determination as to Significance

2.4.2.1 Methodology and Assumptions

Construction

Detailed modeling inputs for the estimation of GHG emissions relating to the Project's construction activities are provided in Section 2.1.2, Analysis of Project Effects and Determination as to Significance, of the EIR's Air Quality section. The construction assumptions provided in Section 2.1.2 are applicable to the GHG analysis as well. The analysis contained herein is based on the following assumptions outlined in Table 2.1-4, Construction Phasing Assumptions (duration of phases is approximate). The construction equipment mix used for estimating the construction emissions of the Project is based on information provided by the applicant and is shown in Table 2.1-5, Construction Scenario Assumptions.

Emission Reduction Strategies

There are no quantifiable construction-related emission reduction strategies (non-mitigation measures) assumed for the construction of the Project.

Operation

Area Sources

CalEEMod was used to estimate operational emissions from area sources, including emissions from landscape maintenance equipment and hearths. (Emissions associated with natural gas usage in space heating and water heating are calculated in the building energy use module of CalEEMod, as described in the following text).

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers. The emissions associated from landscape equipment use are estimated based on CalEEMod default values for emission factors (grams per square foot of building space per day) and number of summer days (when landscape maintenance would generally be performed) and winter days. For San Diego County, the average annual number of summer days is estimated at 180 days (CAPCOA 2016).

Hearths result in emissions from the combustion of wood or natural gas in stoves and fireplaces. The Project is designed to only use natural gas stoves and fireplaces.

Energy Sources

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage (non-hearth).

CalEEMod default values for energy consumption for each land use were applied for the Project analysis. The energy use from non-residential land uses is calculated in CalEEMod based on the California Commercial End-Use Survey database. The program uses data collected during the Residential Appliance Saturation Survey to develop energy intensity values (electricity and natural gas usage per square foot per year) for residential buildings. Energy use in buildings (both natural gas and electricity) is divided by the program into end use categories subject to Title 24 requirements (end uses associated with the building envelope, such as the HVAC system, water heating system, and integrated lighting) and those not subject to Title 24 requirements (such as appliances, electronics, and miscellaneous “plug-in” uses).

Title 24 of the California Code of Regulations serves to enhance and regulate California's building standards. The most recent amendments to Title 24, Part 6, referred to as the 2016 standards, became effective on January 1, 2017. The previous amendments were referred to as the 2013 standards.

The Project's residential and non-residential buildings will be designed to exceed the 2016 Title 24 energy standards by 15%. The Project is also implementing rooftop solar photovoltaic energy production, which will cover 70% of residential building electricity use and 50% of the Village Center's electricity use.

Mobile Sources

Following the completion of construction activities, the Project would generate GHG emissions from mobile sources (vehicular traffic), as a result of the residents and workers from the Project. The daily vehicle miles traveled (VMT) were estimated using the CalEEMod default values for each land-use type. The average weekday trip rates were taken from the Transportation Impact Analysis study for the report (Appendix 2.7-1). The average weekday trip rate was then scaled up or down according to the CalEEMod default ratio according to each land use. The estimated trip lengths and trip modes were based on CalEEMod defaults for every land-use. CalEEMod then was used to estimate emissions from proposed vehicular sources (refer to Appendix 2.1-1). CalEEMod default data, including temperature, trip characteristics, variable start information, emissions factors, and trip distances, were conservatively used for the model inputs. Project-related traffic was assumed to include a mixture of vehicles in accordance with the model outputs for traffic. Emission factors representing the vehicle mix and emissions for 2023 were conservatively used to estimate emissions associated with vehicular sources. The 2023 operational year represents the completion of the last phase of the Project and would represent maximum daily operational emissions.

As discussed in detail in the Specific Alignment Plan (Appendix 2.7-1), the Project is designed to improve the pedestrian and bicyclist network in the neighborhood through the use of a walking and bicycling trail system that connects all residential villages, the Village Center, and the adjacent neighborhoods together. All on-site Project roadways would include street and intersection improvements that operate as traffic calming measures. The Project will also include traffic calming measures for a few of the surrounding streets and intersections. Additionally, the Project would provide 10 publicly accessible charging stations for electric vehicles at the Village Center. Although not quantified in this analysis, it is expected that the inclusion of electric vehicle charging stations would reduce mobile source GHG emissions in the City.

Solid Waste

The Project would generate solid waste, and therefore, result in CO₂E emissions associated with landfill off-gassing. Solid waste generation was derived from the CalEEMod default rates for each land-use type. Emission estimates associated with solid waste were estimated using CalEEMod. A solid waste diversion rate of 50% was assumed in accordance with AB 939.

Water Supply and Wastewater

Water supplied to the Project requires the use of electricity. Accordingly, the supply, conveyance, treatment, and distribution of water would indirectly result in GHG emissions through use of electricity. Annual water use for the Project and GHG emissions associated with the electricity used for water supply were calculated based upon default water use estimates for each land-use type as estimated by CalEEMod and SDG&E factors. The Project would include low-flow fixtures in all buildings and use non-potable water for irrigation of the parks and greenbelts. Additional reclaimed water will be available for the Project to use, but as a conservative measure it was only assumed to be used for the parks and greenbelts.

Emission Reduction Strategies

The operational emission reduction strategies (non-mitigation measures) shown in Table 2.4-5, Emission Reduction Strategies, were quantitatively assumed in CalEEMod for the purposes of estimating mitigated Project emissions (implementation of these strategies is not reflected in the unmitigated Project emissions). The Project includes the following PDFs, which are included in Appendix 2.4-1 and Table 2.4-5:

PDF-GHG-1 Use reclaimed water for park and greenbelt irrigation.

PDF-GHG-2 Use low-flow water fixtures.

PDF-GHG-3 The Project includes 10 publicly accessible electric-vehicle charging stations at the Village Center.

The following PDFs from the Air Quality section of this EIR also would reduce GHG-related effects as part of the Project design:

PDF-AQ-2 Exceed 2016 Title 24 building energy efficiency standards by 15%. Additionally, the Project will include electricity-saving features, such as an increase in energy efficiency above the 2016 Title 24 standards and solar photovoltaic systems that satisfy 70% of the electricity demand for residential buildings and 50% of the electricity demand for the Village Center.

PDF-AQ-3 Traffic-calming measures for all new streets and existing affected streets and intersections.

PDF-AQ-4 Improve the pedestrian network of the community by constructing an integrated walking and bicycling trail that would connect the villages with the Village Center and adjacent community.

2.4.2.2 Guidelines for the Determination of Significance

CEQA Guidelines

SB 97, enacted in 2007, expressly recognized the need to analyze GHG emissions as a part of the CEQA process. SB 97 required the Governor's Office of Planning and Research (OPR) to develop, and the California Natural Resources Agency to adopt, amendments to the CEQA Guidelines to address the analysis and mitigation of GHG emissions (California Public Resources Code, Section 21083.05). In 2010, a series of CEQA Guidelines amendments were adopted to fulfill SB 97 requirements, including revisions to Appendix G of the CEQA Guidelines. The revisions included two questions related to GHG emissions, which were intended to satisfy the Legislative directive in California Public Resources Code Section 21083.05 that the effects of GHG emissions be analyzed under CEQA.

Section 15064.4 of the CEQA Guidelines was added as one of the amendments addressing GHG emissions. Section 15064.4 states the following:

Determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project (14 CCR 15064.4).⁴

Section 15064.4(b)(1)–(3) further states the following:

A lead agency should consider the following factors, among others, when assessing the significance of impacts from greenhouse gas emissions on the environment: (1) the extent to which a project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting; (2) whether project emissions exceed a threshold of significance that the lead agency

⁴ Section 15064 of the CEQA Guidelines provides the foundational guidance for determinations of significant effect on the environment. As noted in Section 15064(b), “[a]n ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting.”

determines applies to the project; and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions (14 CCR 15064.4(b)(1)–(3)).

Recognizing that GHG emissions contribute to the cumulative impact condition of global climate change, Section 15064(h)(1) of the CEQA Guidelines is also applicable. 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.

Finally, Section 15064(h)(3) of the CEQA Guidelines is pertinent. Section 15064(h)(3) states the following:

[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 (14 CCR 15064(h)(3)).

Appendix G of the CEQA Guidelines

The State of California has developed guidelines to address the significance of greenhouse gas emissions impacts that are contained in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.). For purposes of this EIR, Appendix G will apply to the direct, indirect, and cumulative impact analyses. A significant impact to global climate change resulting from GHG emissions would result if the Project would:

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

Neither the State of California nor the San Diego Air Pollution Control District has adopted emission-based thresholds of significance for GHG emissions under CEQA.

For purposes of GHG significance criterion A from Appendix G, the Project's GHG emissions are assessed by evaluating the Project's consistency with the E-CAP, as well as the Project's potential to exceed a City-specific efficiency metric threshold (i.e., service population threshold) for 2023. The efficiency metric threshold developed for the purposes of this GHG emissions analysis is discussed below in detail.

For purposes of GHG significance criterion B from Appendix G, the Project is assessed based on its potential to conflict with the City's E-CAP, SANDAG's Regional Plan, and CARB's Scoping Plan, including the Draft 2030 Scoping Plan. The Regional Plan and Scoping Plan goals and measures are analyzed against the Project as part of the consistency analysis. The potential for the Project to conflict with these plans is addressed in detail below.

City of Escondido's E-CAP Significance Criteria

Consistent with the CEQA Guidelines and the E-CAP, each new project within the City subject to CEQA is evaluated relative to the following criteria:

- Projects below the E-CAP's screening threshold of 2,500 MT CO₂E for GHGs are determined to be less than significant and no further GHG analysis is required.
- Projects that exceed the E-CAP's screening threshold are able to tier from the GHG analysis associated with the E-CAP, and demonstrate that impacts are less than significant, by accumulating 100 points from the E-CAP's screening tables for new development (City of Escondido 2013b).

To evaluate the potential for the Project to generate GHG emissions that may have a significant impact on the environment (GHG significance criterion A) and the potential for the Project to conflict with an applicable GHG reduction plan, policy, or regulation (GHG significance criterion B), this analysis applies the City's two-part framework identified above. This approach is discussed further below.

City-Specific Efficiency Metric

The significance criteria used in this GHG emissions analysis are those set forth above from Appendix G of the CEQA Guidelines, and the application of those criteria is informed by CEQA Guidelines Sections 15064, 15064.4, and 15126.4. For purposes of this EIR, whether a project's GHG emissions would have a significant impact is assessed against application of the E-CAP and a second analytic method based upon the concept of an "efficiency matrix," which is described in detail below.

An efficiency metric is calculated by dividing the allowable GHG emissions inventory in a selected calendar year by the service population (residents plus employees), which then leads to the identification of a quantity of emissions that can be permitted on a per service population basis without significantly impacting the environment. This approach is appropriate for the Project because it measures the Project's emissions on a per-service population basis to determine its overall GHG efficiency relative to regulatory GHG reduction goals, as opposed to applying a relatively arbitrary threshold limit that may not be well substantiated. Under the efficiency metric, the Project's GHG emissions are evaluated herein relative to the emissions level in the Project's build-out year and the build-out year's associated efficiency metric. To that end, an efficiency metric was calculated based on the 2023 emissions level (year of Project build-out) and the Project's service population (sum of number of employees and the number of residents provided by the Project).

Because there are no emissions, employment, or population data available for the Project's build-out year (2023), an efficiency metric was generated for Year 2023 by interpolating the efficiency metrics for Years 2020 and 2035. As illustrated below, the efficiency metric is first calculated for 2020, so as to establish the benchmark for compliance with AB 32's 2020 reduction target (a return to 1990 levels). The benchmark is then interpolated to the Project's build-out year, using the 5.2% rate of average annual decline identified by CARB as necessary to achievement of SB 32's 2030 reduction target (40% below 1990 levels) and EO S-3-05's 2050 reduction target (80% below 1990 levels) (CARB 2015b).

To develop the 2020 efficiency metric, emissions from the E-CAP were used for Year 2020, which includes enacted statewide and local GHG reduction measures. To develop the service population for that year, the City's General Plan EIR was relied upon for the forecasted population, which is consistent with the assumptions in the E-CAP. To determine the employment data for 2020, the SANDAG 2050 Series 12 Regional Growth Forecast was used for the City, which was the closest employment data available compared to the underlying data used in the E-CAP forecasts.

To develop the efficiency metric for 2035, the City's forecasted emissions in 2020, as provided in the E-CAP, were reduced by 5.2% per year through 2035 (CARB 2015b). The SANDAG 2050 Regional Growth Forecast Series 13 was then used for Year 2035 population and employment data for the City. The Series 13 forecast is SANDAG's most recent forecast. (SANDAG periodically adopts updated regional forecasts, with the most recent (Series 13) adopted in 2013. At the time this analysis was prepared, the Series 14 forecast had not yet been adopted.)

The efficiency metrics for 2020, 2035, and the interpolation for 2023 are illustrated in Table 2.4-6, 2020 and 2035 Calculated Efficiency Metrics, and Table 2.4-7, 2023 Interpolated Efficiency Metric. If the Project achieves the 2023 efficiency metric, the Project would not

interfere with the state’s ability to achieve the mid-term and long-term GHG reduction targets per SB 32 and EO S-3-05.

As shown in Table 2.4-7, the calculated efficiency metric for 2023 (based on CARB’s projected emissions trajectory) is 3.15 metric tons per service population per year (MT/SP/yr). Again, this 2023 efficiency metric was calculated using information developed by CARB to reflect the trajectory in emissions reductions (5.2% reduction per year) needed to achieve the statewide 2030 and 2050 targets. If the Project achieves the 2023 efficiency metric, it would not interfere with attainment of the 2030 and 2050 statewide emission reduction targets and therefore would not interfere with the state’s and the City’s ability to achieve the mid-term and long-term GHG reduction targets in the E-CAP.

2.4.2.3 Analysis

- A. *Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?***

Construction Impacts

Construction of the Project would result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road hauling and vendor (material delivery) trucks, and worker vehicles. GHG emissions associated with temporary construction activity were quantified using the CalEEMod. A detailed depiction of the construction schedule—including information regarding phasing, equipment used during each phase, haul trucks, vendor trucks, and worker vehicles—is included in Section 2.1.2 of this EIR.

Table 2.4-8, Estimated Annual Construction GHG Emissions, shows the estimated annual GHG construction emissions associated with the Project as well as the amortized construction emissions over a 30-year “project life.” The total construction GHG emissions for the Project are 7,873 MT CO₂E. Estimated amortized (over 30 years) Project-generated construction emissions would be approximately 262 MT CO₂E. However, because there is no separate GHG threshold for construction emissions alone, the evaluation of significance is discussed in the operational emissions analysis below.

Operational Impacts

Operation of the Project would result in GHG emissions from vehicular traffic, area sources (e.g., natural gas combustion and landscaping), electrical generation, water supply, and solid waste as described below. Table 2.4-9, Estimated Annual Operational GHG Emissions, shows the operational GHG emissions associated with the Project.

As shown in Table 2.4-9, estimated annual Project-generated GHG emissions in 2018 would be approximately 5,673 MT CO₂E per year as a result of Project operations. Estimated annual Project-generated emissions in 2023 from area, energy sources, mobile, solid waste, and water/wastewater sources, and amortized Project construction emissions would be approximately 5,936 MT CO₂E per year.

As discussed in Section 2.4.2.2, the Project will be evaluated against two quantitative/semi-quantitative methodologies in this section (Section 2.4.2.3) to determine whether the Project's GHG emissions would have a significant impact on the environment.

City of Escondido's E-CAP

The first approach to evaluate significance of the Project's GHG emissions is to evaluate the Project with respect to the City's E-CAP. As previously discussed, the City's E-CAP is only a certified GHG reduction plan, for the purposes of CEQA, through 2020 (14 CCR 15183.5). Although the Project's build-out year of 2023 post-dates the City's E-CAP, the E-CAP remains a relevant document for purposes of this EIR because it is an applicable planning document that has been adopted by the City (e.g., 14 CCR 15125(d)). Additionally, the City's E-CAP provides a useful benchmark for evaluating whether the Project is consistent with the planning framework developed by the City to achieve its AB 32-related emissions reduction objectives.

This analysis compares the Project's emissions from the build-out year to the E-CAP's significance criteria. The City's E-CAP has two levels to determine significance; first, does the project emit more than 2,500 MT CO₂E per year? If so, then the project must apply the E-CAP screening tables. The project would not be determined to have a significant impact if it were to achieve at least 100 points using the screening tables.

As shown in Table 2.4-9, the Project upon full build-out would emit more than 2,500 MT CO₂E per year. Therefore, the Project must apply the screening tables approach. A fully completed screening table is included in Appendix 2.4-1, which includes all PDFs discussed in Table 2.4-5. In accordance with the City of Escondido Greenhouse Gas Emissions Adopted CEQA Thresholds and Screening Tables guidance for mixed use projects, the Project was applied to the residential and commercial screening tables in accordance with the allocated square footage for each building type as a part of the whole Project. Based on building square footage, the Project is 97.7% residential and 2.3% commercial. The Project would score 103.7 points on the residential screening table and 2.7 points on the commercial/industrial screening table, for a total of 106.4 points for the Project. Because the Project scored greater than 100 points on the E-CAP screening table, it would be consistent with the City's E-CAP and would have a **less than significant** impact.

Efficiency Metric

As previously discussed, a project's "service population" refers to a project's residents plus employees that would be generated by the project. The efficiency metric calculated for 2023 (as shown in Table 2.4-7) is 3.15 MT/SP/yr. To estimate the residents for the Project, the persons per household ratio from SANDAG 2050 Series 13 Regional Growth Forecast for 2020 and 2035 is shown in Table 2.4-10, 2020 and 2035 Calculated Persons per Household. Because the persons per household ratio is the same for 2020 and 2035, that same ratio was used for 2023.

Using the 2023 persons per household ratio of 3.20 as calculated in Table 2.4-10 and the 392 residential units, the estimated residential population of the Project would be 1,254.4, rounded to 1,254 residents.

The SANDAG 2050 Series 13 Regional Growth Forecast dataset provides an employment density in jobs per developed acre for industrial, retail, office, schools, and half of mixed use acres for the City. The employment density for 2020 and 2035 was used to interpolate an employment density for 2023, as shown in Table 2.4-11, 2023 Interpolated Employment Density.

As shown in Table 2.4-11, the interpolated employment density for 2023 would be 16.7 jobs per acre for the City. The Project's Village Center, which will provide the Project's employment-generating land uses, is planned to be 5.6 acres. Therefore, the Project would be estimated to employ 93.52 persons (16.7 jobs per acre \times 5.6 acres), rounded to 94. Accordingly, the Project's anticipated service population is 1,348 persons (1,254 residents + 94 employees).

Using the estimated operational emissions of 5,936 MT CO₂E and service population of 1,348, the Project would have a GHG efficiency metric of 4.40 MT/SP/yr. The Project's efficiency metric would exceed the significance threshold efficiency metric of 3.15 MT/SP/yr. Therefore, the Project would result in a **potentially significant** impact (**Impact GH-1**).

B. Would the Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

This section discusses the Project's consistency with the City's E-CAP, SANDAG's Regional Plan, and CARB's Scoping Plan.

Consistency with the E-CAP

As discussed under Criterion A, the Project would be consistent with the City's E-CAP as demonstrated using the screening tables. The Project would achieve over 100 points using the screening tables, which would make it consistent with the E-CAP.

Based on the attributes of the Project (which accumulate more than 100 points under the E-CAP's screening tables) and the density of residential development proposed in comparison to the site's existing zoning, implementation of the Project would not result in development in excess of that anticipated in the E-CAP or increases in population/housing growth beyond those contemplated by SANDAG or the City. As such, the Project would not conflict with or obstruct implementation of the E-CAP; therefore, impacts associated with consistency with the E-CAP would be **less than significant**.

Consistency with the Regional Plan

Regarding consistency with SANDAG's Regional Plan, the Project would include site design elements and project design features (Table 2.4-5) developed to support the policy objectives of the RTP and SB 375. For example, the Project includes 48 acres of open space, including an integrated walking and bicycling trail system that will connect the various components of the Project as well as off-site amenities (restaurants, coffee shops, drug stores, etc.). In addition, traffic calming measures along West Country Club Lane will enhance pedestrian experiences and widen the network of walkable routes throughout the community. The convenient availability of walking and bicycling trails and parks that are accessible for use by both nearby existing residents and new residents will serve to reduce VMT. Finally, because this Project is an infill project, it would have inherently less VMT than a project located at the outskirts of a city because of the proximity of goods and services. Table 2.4-12, San Diego Forward: The Regional Plan Consistency Analysis, illustrates the Project's consistency with all applicable goals and policies of the Regional Plan (SANDAG 2015).

As shown in Table 2.4-12, the Project is consistent with all applicable Regional Plan Policy Objectives or Strategies. SANDAG worked with the local jurisdictions to identify Regional Housing Needs Assessment allocation options that meet the four goals of housing element law (Government Code Section 65484(d)(1)–(4)) within the Regional Plan. The second of the four objectives of the SANDAG Regional Housing Needs Assessment is to promote infill development and socioeconomic equity, the protection of environmental and agricultural resources, and the encouragement of efficient development patterns. Also, one of the key achievements projected for the Regional Plan is for nearly three-quarters of multi-family housing to be built on redevelopment or infill sites. This Project would be consistent with that goal as it is developing on an infill site and protects the environment with the planned open space and walking and bicycling trail network.

In summary, the Project's mix of land uses, including residential in conjunction with the retail, commercial, and recreation, would combine with an integrated pathway and walking/bicycling trail plan and internal streets and roads that promote a pedestrian experience for the Project's residents and visitors and facilitate non-vehicular travel, consistent with SB 375 and SANDAG's

Regional Plan. As shown in Table 2.4-12, the Project would be consistent with policy objectives of SANDAG's Regional Plan. Therefore, impacts would be **less than significant**.

Consistency with the Scoping Plan

The Scoping Plan, approved by CARB on December 12, 2008, provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. As such, the Scoping Plan is not directly applicable to specific projects. Relatedly, in the *Final Statement of Reasons for the Amendments to the CEQA Guidelines*, the California Natural Resources Agency observed that "[t]he [Scoping Plan] may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009b). Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., Low Carbon Fuel Standard), among others. The Project would comply with all applicable regulations adopted in furtherance of the Scoping Plan to the extent required by law.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32 and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. Table 2.4-13, Project Consistency with Scoping Plan GHG Emission Reduction Strategies, highlights measures that have been developed under the Scoping Plan and the Project's consistency with Scoping Plan measures. The table also includes measures proposed in the Draft 2017 Second Update. To the extent that these regulations are applicable to the Project, its inhabitants, or uses, the Project would comply with all applicable regulations adopted in furtherance of the Scoping Plan.

Based on the analysis in Table 2.4-13, the Project would be consistent with the applicable strategies and measures in the Scoping Plan.

In addition to the measures outlined in Table 2.4-13, the Scoping Plan also highlights in several areas the goals and importance of infill projects. Specifically, the Scoping Plan calls out an ongoing and proposed measure to streamline CEQA compliance and other barriers to infill development. The plan encourages infill projects and sees them as crucial to achieving the state's long-term climate goals. The plan encourages accelerating equitable and affordable infill development through enhanced financing and policy incentives and mechanisms.

The state will complete an Integrated Natural and Working Lands Climate Change Action Plan by 2018, which will consider aggregation of eco-regional plans and efforts to achieve net sequestration goals. The Action Plan will include goals and plans to promote and provide incentives for infill development through community revitalization and urban greening, and promote the adoption of regional transportation and development plans, such as SB 375 Sustainable Communities Strategies and Climate Action Plans that prioritize infill and compact development and also consider the climate change impacts of land use and management.

The following strategies were outlined as to expand infill development within the scoping plan:

- Encouraging regional Transfer of Development Rights programs to allow owners of natural and working lands to sell their development rights to developers who can use those rights to add additional density to development projects in preferred infill areas.
- Promoting regional Transit-Oriented Development funds that leverage public resources with private-sector investment capital to provide flexible capital for Transit-Oriented Development projects.
- Rebates for low-VMT/location-efficient housing, similar to programs that use rebates to encourage adoption of energy-efficient appliances, zero-emission cars, water-efficient yards, or renewable energy installation. For example, the rebate could reimburse residents for a portion of the down payment for purchasing or renting a qualified home, in exchange for a minimum term of residence.
- Promotion of cross-subsidizing multi-station financing districts along transit corridors to leverage revenues from development in strong-market station areas in order to seed needed infrastructure and development in weaker-market station areas.
- Abatement of residential property tax increases in exchange for property-based improvements in distressed infill areas.
- Ways to promote reduced parking in areas where viable transportation alternatives are present.
- Additional creative financing mechanisms to enhance the viability of priority infill projects.
- Ways to promote and strengthen Urban Growth Boundaries to promote infill development and conservation of natural and working lands by defining and limiting developable land within a metropolitan area according to projected growth needs.

In summary, the Project would be consistent with the measures and policy goals as shown in Table 2.4-13. The Project would also be consistent with the various efforts the Scoping Plan established to encourage infill development projects. Therefore, the Project would be consistent with CARB's Scoping Plan.

Finally, the San Diego Air Pollution Control District has not adopted GHG reduction measures that would apply to the GHG emissions associated with the Project. Therefore, this impact would be **less than significant**.

2.4.3 Cumulative Impact Analysis

As described in Section 2.4.2.2, global climate change is a cumulative issue by definition, and its analysis constitutes cumulative review. A project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of GHG emissions. Pursuant to CEQA Guidelines Sections 15064(h)(3) and 15130(d), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously adopted plan or mitigation program under specified circumstances. The Project would obtain greater than 100 points from the E-CAP screening tables and therefore would implement the Project's fair-share portion of pertinent GHG reduction measures and would generate a less than significant impact. However, the Project, absent mitigation, would not achieve the City-specific efficiency metric for 2023, thereby creating a potentially significant impact with respect to the Project's consistency with the longer-term statewide GHG reduction goals for 2030 and 2050. Therefore, for GHG emissions, the project would have a **potentially significant** cumulative impact (**Impact GHG-CUM-1**).

2.4.4 Significance of Impacts Prior to Mitigation

Based on the analysis above, the Project would have the following **potentially significant** impacts prior to mitigation:

Impact GHG-1 The Project would exceed the City-specific GHG efficiency metric for 2023 prior to mitigation.

Impact GHG-CUM-1 The Project would exceed the City-specific GHG efficiency metric for 2023 prior to mitigation, creating a potential cumulative impact relating to Project consistency with long-term statewide GHG reduction goals.

2.4.5 Mitigation

The following mitigation would reduce **Impact GHG-1** and **Impact GHG-CUM-1** to a level less than significant:

M-GHG-1 The applicant or its designee will purchase and retire greenhouse gas (GHG) offsets to reduce the Project's GHG emissions level to 3.15 metric tons carbon dioxide

equivalent (MT CO₂E) per service population per year, consistent with the performance standards and requirements set forth below.

- The GHG offsets shall be secured from an accredited registry that is recognized by the California Air Resources Board (CARB) or a California air district, or from an emissions reduction credits program that is administered by CARB or a California air district.
- The GHG offsets shall represent the past reduction or sequestration of 1 MT CO₂E that is “not otherwise required,” in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15126.4(c)(3).
- The GHG offsets shall be real, permanent, quantifiable, verifiable, and enforceable.
- The quantity of GHG offsets required to achieve the service population value set forth above shall be calculated in and supported by technical documentation that is submitted to the City of Escondido (City) as part of the Mitigation Monitoring and Reporting Program, using an approved methodology demonstrating the quantity of reductions is valid and sufficient. The calculations shall be prepared by a qualified GHG emissions consultant utilizing the California Emissions Estimator Model or other widely-accepted methodologies that are acceptable to the City. The calculations shall demonstrate the quantity of reductions is valid and sufficient, as determined by the City.
- The applicant shall offset the Project’s GHG emissions prior to receiving the 196th certificate of occupancy from the City. This represents 50% of the Project’s residential build-out and thus the Project’s emissions would be offset prior to completion of the Project.

2.4.6 Significance of Impacts After Mitigation

The following discussion provides the significance conclusion reached after application of the mitigation measures in the preceding impact analysis, and the level of impact that would result after implementation of the Project with mitigation. Where mitigation does not reduce impacts to less than significant, this section focuses on the feasibility of mitigating the impacts.

Generation of Significant GHG Emissions

With implementation of **M-GHG-1**, the Project would offset 1,682 MT CO₂E per year over the Project’s lifetime, for a total of 50,472 MT CO₂E. The Project’s GHG emissions would be reduced to a level below the efficiency metric of 3.15 MT/SP/year, which would be consistent

with the GHG emission statewide reduction goals for 2030 and 2050. Therefore, after mitigation, **Impact GHG-1** would be **less than significant**.

Cumulatively Significant GHG Emissions Impact

With implementation of **M-GHG-1**, the Project would offset GHG emissions to a level below the efficiency metric of 3.15 MT/SP/year, which would be consistent with the GHG emission statewide reduction goals for 2030 and 2050. Therefore, the Project would result in a **less than significant** cumulative impact (**Impact GHG-CUM-1**).

Table 2.4-1
Six Top GHG-Producing Countries and the European Union

Emitting Countries	GHG Emissions (MMT CO ₂ E)
China	10,975.5
United States	6,235.1
European Union	4,399.2
India	3,013.8
Russian Federation	2,322.2
Japan	1,344.6
Brazil	1,012.6
Total^a	29,302.9

Source: WRI 2015.

Notes: GHG = greenhouse gas; MMT = million metric tons; CO₂E = carbon dioxide equivalent.

^a Total may not sum due to rounding.

Table 2.4-2
GHG Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO ₂ E)	Percentage of Total ^a
Transportation	159.53	36%
Industrial uses	93.32	21%
Electricity generation ^b	88.24	20%
Residential and commercial uses	38.34	9%
Agriculture	36.11	8%
High GWP substances	17.15	4%
Recycling and waste	8.85	2%
Total^a	441.54	100%

Source: CARB 2016.

Notes: GHG = greenhouse gas; MMT = million metric tons; CO₂E = carbon dioxide equivalent; GWP = global warming potential. Emissions reflect the 2014 California GHG inventory.

^a Percentage of total has been rounded, and total may not sum due to rounding.

^b Includes emissions associated with imported electricity, which account for 36.51 MMT CO₂E annually.

**Table 2.4-3
E-CAP 2010 and 2020 GHG Emissions**

Source Category	2010	2020	Reduced 2020	Percentage Reduced By
	MT CO ₂ E			
Transportation	368,622	419,741	310,662	26%
Energy	395,565	441,025	357,914	19%
Area sources	52,559	54,977	54,451	1%
Water and wastewater	25,360	27,278	21,979	19%
Solid waste	41,724	47,273	41,061	13%
Construction	2,288	2,288	2,059	10%
Total	886,118	992,583	788,127	21%
2020 Reduction Target		788,176		

Source: City of Escondido 2012.

Notes: E-CAP = Escondido Climate Action Plan; GHG = greenhouse gas; MT = metric ton; CO₂E = carbon dioxide equivalent.

Mass emissions of CO₂E shown in the table are rounded to the nearest whole number.

Totals shown may not sum due to rounding.

The reduction target for 2020 is based on a 15% decrease from Escondido's revised 2005 emissions inventory.

**Table 2.4-4
E-CAP 2010 and 2035 GHG Emissions**

Source Category	2010	2035	Reduced 2035	Percentage Reduced By
	MT CO ₂ E			
Transportation	368,622	556,818	271,436	51%
Energy	395,565	523,427	357,294	32%
Area sources	52,559	59,151	57,733	2%
Water and wastewater	25,360	30,980	23,779	23%
Solid waste	41,724	57,518	41,061	29%
Construction	2,288	2,288	2,059	10%
Total	886,118	1,230,182	753,363	39%

Source: City of Escondido 2012.

Notes: E-CAP = Escondido Climate Action Plan; GHG = greenhouse gas; MT = metric ton; CO₂E = carbon dioxide equivalent.

Mass emissions of CO₂E shown in the table are rounded to the nearest whole number.

Totals shown may not sum due to rounding.

**Table 2.4-5
Emission Reduction Strategies**

Regulatory Compliance Measure
Reduce solid waste disposal by at least 50% in accordance with AB 939.
Project Design Features
PDF-GHG-1: Use reclaimed water for park and greenbelt irrigation. ^a
PDF-GHG-2: Use low-flow water fixtures. ^b
PDF-GHG-3: The Project includes 10 publicly accessible electric-vehicle charging stations at the Village Center.

**Table 2.4-5
Emission Reduction Strategies**

Project Design Features
PDF-AQ-2: Exceed 2016 Title 24 building energy efficiency standards by 15%. Additionally, the Project will include electricity-saving features, such as an increase in energy efficiency above the 2016 Title 24 standards and solar photovoltaic systems that satisfy 70% of the electricity demand for residential buildings and 50% of the electricity demand for the Village Center.
PDF-AQ-3: Traffic-calming measures for all new streets and existing affected streets and intersections. ^c
PDF-AQ-4: Improve the pedestrian network of the community by constructing an integrated walking and bicycling trail that would connect the villages with the Village Center and adjacent community. ^d

Source: New Urban West Inc. 2017.

Notes:

- ^a New Urban West Inc. 2017, p. 55.
- ^b New Urban West Inc. 2017, p. 5.
- ^c New Urban West Inc. 2017, p. 4.
- ^d New Urban West Inc. 2017, p. 1.

**Table 2.4-6
2020 and 2035 Calculated Efficiency Metrics**

	Population	Employment	Service Population (Population + Employment)	Emissions (MT CO ₂ E)	Efficiency Metric (MT/SP/yr)
2020 Efficiency Metric – E-CAP	154,329 ^a	66,803 ^b	221,132	788,127 ^c	3.56
2035 Efficiency Metric – CARB Annual Reduction	172,892 ^d	57,762 ^d	230,654	353,770 ^e	1.53

Sources: City of Escondido 2012; SANDAG 2011b; City of Escondido 2013a; SANDAG 2013; CARB 2015b.

Notes: MT = metric ton; CO₂E = carbon dioxide equivalent; SP = service population; yr = year; E-CAP = *Escondido Climate Action Plan*; CARB = California Air Resources Board.

- ^a Table 4.13-2: Forecasted Population Growth Escondido and San Diego County (City of Escondido 2012).
- ^b SANDAG 2050 Regional Growth Forecast, Series 12 (SANDAG 2011b).
- ^c Table 5-9 of the E-CAP (City of Escondido 2013a).
- ^d SANDAG 2050 Regional Growth Forecast, Series 13 (SANDAG 2013).
- ^e 2035 emissions were calculated based on the City's E-CAP forecast for 2020 and using a 5.2% annual reduction based on the CARB *Update to the Scoping Plan* (CARB 2015b).

**Table 2.4-7
2023 Interpolated Efficiency Metric**

	2020 Efficiency Metric (MT/SP/yr)	2035 Efficiency Metric (MT/SP/yr)	2023 Efficiency Metric ^a (MT/SP/yr)
2023 Efficiency Metric – CARB Annual Reduction	3.56	1.53	3.15

Notes: CARB = California Air Resources Board; MT = metric ton; SP = service population; yr = year

- ^a The 2023 efficiency metric was calculated as follows: $((2035 \text{ Efficiency Metric} - 2020 \text{ Efficiency Metric}) \div (2035 - 2020)) \times (2023 - 2020) + (2020 \text{ Efficiency Metric})$.

**Table 2.4-8
Estimated Annual Construction GHG Emissions**

Construction Year	CO ₂ (MT/yr)	CH ₄ (MT/yr)	N ₂ O (MT/yr)	CO ₂ E (MT/yr)
2018	2,862.79	0.87	0.00	2,884.66
2019	2,621.49	0.52	0.00	2,634.55
2020	684.59	0.10	0.00	687.11
2021	674.53	0.10	0.00	676.99
2022	664.26	0.10	0.00	666.68
2023	322.15	0.04	0.00	323.24
Total				7,873.23
Amortized Emissions				262.44

Notes: GHG = greenhouse gas; MT/yr = metric tons per year; CO₂ = carbon dioxide; CH₄ = methane; N₂O = nitrous oxide; CO₂E = carbon dioxide equivalent.

See Appendix 2.4-1 for complete results.

**Table 2.4-9
Estimated Annual Operational GHG Emissions**

Emission Source	CO ₂ (MT/yr)	CH ₄ (MT/yr)	N ₂ O (MT/yr)	CO ₂ E (MT/yr)
Area	313.52	0.01	0.01	315.47
Energy	680.95	0.02	0.01	684.34
Mobile	4,165.18	0.21	0.00	4,170.46
Solid waste	47.55	2.81	0.00	117.80
Water supply and wastewater	322.85	1.93	0.05	385.24
Total				5,673.31
<i>Amortized construction emissions</i>				<i>262.44</i>
Operation + amortized construction total				5,935.75

Notes: GHG = greenhouse gas; CO₂ = carbon dioxide; MT/yr = metric tons per year; CH₄ = methane; N₂O = nitrous oxide; CO₂E = carbon dioxide equivalent.

See Appendix 2.4-1 for detailed results.

**Table 2.4-10
2020 and 2035 Calculated Persons per Household**

Year	Population	Households	Persons Per Household (Population/Household)
2020	163,292	51,020	3.20
2035	170,608	53,354	3.20

Source: The population and household data is based on the household population and occupied housing units data in the Population and Housing Table in SANDAG's Series 13 Regional Growth Forecast (SANDAG 2013).

Table 2.4-11
2023 Interpolated Employment Density

2020 Employment Density	2035 Employment Density	2023 Employment Density
16.5	17.4	16.7

Source: SANDAG 2013.

Note: The 2023 employment density was calculated as follows: $((2035 \text{ Employment Density} - 2020 \text{ Employment Density}) \div (2035 - 2020)) \times (2023 - 2020) + 2020 \text{ Employment Density} = 2023 \text{ Employment Density}$.

Table 2.4-12
San Diego Forward: The Regional Plan Consistency Analysis

Category	Policy Objective or Strategy	Consistency Analysis
<i>The Regional Plan – Policy Objectives</i>		
Mobility Choices	Provide safe, secure, healthy, affordable, and convenient travel choices between the places where people live, work, and play.	<p>Consistent. The Project incorporates smart growth and sustainable design principles in its development plan. More specifically, the Project's design and compact mixed-use setting facilitates a comprehensive, multi-modal transportation network and puts more people in areas that are more accessible to a range of transportation options, including public transit. The design and locational attributes of the Project positively emphasize particular commuting choices and convenient access to the rest of the City of Escondido (City) and the region, which will reduce the number of vehicle trips and overall VMT.</p> <p>Furthermore, the Specific Alignment Plan addresses the travel choices of other local streets, as well as the rehabilitation or upgrading of facilities in older, developed areas.</p>
Mobility Choices	Take advantage of new technologies to make the transportation system more efficient and environmentally friendly.	<p>Consistent. The Project would include lane and intersection design configuration modifications where necessary, as well as installation of signalization where required per the Transportation Impact Analysis (Appendix 2.7-1 to this EIR). The Project would also include a walking and bicycling trail, which would reduce VMT. The Project also includes 10 electric vehicle charging stations at the Village Center to support electric vehicle adoption.</p> <p>Additionally, the Project would not impair SANDAG's ability to employ new technologies to make travel more reliable and convenient.</p>

**Table 2.4-12
San Diego Forward: The Regional Plan Consistency Analysis**

Category	Policy Objective or Strategy	Consistency Analysis
Habitat and Open Space Preservation	Focus growth in areas that are already urbanized, allowing the region to set aside and restore more open space in our less developed areas.	Consistent. The Project would be located close to major urban and employment centers, including the City of Escondido. As such, the Project proposes to develop future housing opportunities in an infill location that capitalizes on existing infrastructure rather than other non-developed areas – including open space areas, sensitive habitats, or areas otherwise constrained due to topography, flooding, or other factors. The Project is also within the job-centric SR-78 corridor. One of the objectives of the Project is to ensure that new development is compatible with community-specific settings and promotes basic best practices in urban design. For that reason, the Project’s open space design would consist of 48 acres of greenbelt, neighborhood parks, and walking/bicycling trails.
Habitat and Open Space Preservation	Protect and restore our region’s urban canyons, coastlines, beaches, and water resources.	Consistent. Site planning for the Project took into account existing landforms and topography by concentrating development between and away from ridgelines. The open space includes environmental drainage channels designed to safely convey the existing water drainage of San Marcos Creek. Portions of the channels will be used to treat the stormwater runoff.
Regional Economic Prosperity	Invest in transportation projects that provide access for all communities to a variety of jobs with competitive wages.	Not Applicable. The Project would not impair the ability of SANDAG to invest in transportation projects available to all members of the community.
Regional Economic Prosperity	Build infrastructure that makes the movement of freight in our community more efficient and environmentally friendly.	Not Applicable. The Project does not propose regional freight movement, nor would it impair SANDAG’s ability to preserve and expand options for regional freight movement.
Partnerships/Collaboration	Collaborate with Native American tribes, Mexico, military bases, neighboring counties, infrastructure providers, the private sector, and local communities to design a transportation system that connects to the mega-region and national network, and works for everyone and fosters a high quality of life for all.	Not Applicable. The Project would not impair the ability of SANDAG to provide transportation choices to better connect the San Diego region with Mexico, neighboring counties, and tribal nations. Furthermore, the Project applicant has coordinated with Native American tribes and neighboring jurisdictions.
Partnerships/Collaboration	As we plan for our region, recognize the vital economic, environmental, cultural, and community linkages between the San Diego region and Baja California.	Not Applicable. The Project would not impair the ability of SANDAG to provide transportation choices to better connect the San Diego region with Mexico.

Table 2.4-12
San Diego Forward: The Regional Plan Consistency Analysis

Category	Policy Objective or Strategy	Consistency Analysis
Healthy and Complete Communities	Create great places for everyone to live, work, and play.	<p>Consistent. The Project proposes new residential and resident-serving development in an infill location that would facilitate the creation of a more livable neighborhood that integrates residents into the existing community. The Project's design and compact mixed land use setting would improve land use access, as well as the neighborhood's multi-modal transportation network. The Project's internal circulation features would provide residents the opportunity to access employment, recreational, and commercial uses via multiple modes of transportation. The Project also would encourage non-vehicular modes of transportation through the inclusion of an extensive walking/bicycling trail system within the greenbelts.</p> <p>Additionally, the Project was designed to promote health and sustainability by focusing on a compact pattern of development and by offering many amenities to its residents within walking distance, including local organic produce, grocery store, restaurant, health club, and swimming pool.</p>
Healthy and Complete Communities	Connect communities through a variety of transportation choices that promote healthy lifestyles, including walking and biking.	<p>Consistent. The Project's internal circulation features would provide residents the opportunity to access employment, recreational, and commercial uses via multiple modes of transportation. The Project also would encourage non-vehicular modes of transportation through the inclusion of an extensive walking/bicycling trail system within the greenbelts.</p>
Environmental Stewardship	Make transportation investments that result in cleaner air, environmental protection, conservation, efficiency, and sustainable living.	<p>Consistent. The Project would encourage non-vehicular modes of transportation through the inclusion of bike lanes and an extensive walking/bicycling trail system within the greenbelts.</p> <p>Additionally, the Project was designed to promote health and sustainability by focusing on a compact pattern of development. The Project includes 10 publicly accessible electric-vehicle charging stations at the Village Center.</p>
Environmental Stewardship	Support energy programs that promote sustainability.	<p>Consistent. The Project would include on-site renewable energy production through solar photovoltaic rooftop systems for all residential units.</p>

Table 2.4-12
San Diego Forward: The Regional Plan Consistency Analysis

Category	Policy Objective or Strategy	Consistency Analysis
<i>Sustainable Communities Strategy – Strategies</i>		
Strategy #1	Focus housing and job growth in urbanized areas where there is existing and planned transportation infrastructure, including transit.	Consistent. The Project would be located close to major urban and employment centers, including the City of Escondido. The Project would redevelop an existing golf course within a developed neighborhood, providing a significant infill opportunity for the community. As such, the Project proposes to develop future housing opportunities in an infill location that capitalizes on existing infrastructure rather than other non-developed areas – including open space areas, sensitive habitats, or areas otherwise constrained due to topography, flooding, or other factors. The Project is also within the job-centric SR-78 corridor.
Strategy #2	Protect the environment and help ensure the success of smart growth land use policies by preserving sensitive habitat, open space, cultural resources, and farmland.	Consistent. The Project would be located close to major urban and employment centers, including the City of Escondido. The Project's open space design would preserve 48 acres of greenbelt, parks, and walking/bicycling trails. As such, the Project proposes to develop future housing opportunities in an infill location that capitalizes on existing infrastructure rather than other non-developed areas – including open space areas, sensitive habitats, or areas otherwise constrained due to topography, flooding, or other factors. Additionally, the Project would include approximately 5.5 acres of farmland to grow organic produce on site. All cultural impacts associated with the Project will be mitigated as outlined in the Cultural Resources Study (Appendix 2.3-1 to this EIR).
Strategy #3	Invest in a transportation network that gives people transportation choices and reduces GHG emissions.	Consistent. The Project would encourage non-vehicular modes of transportation through the inclusion of bike lanes and an extensive walking and bicycling trail system within the greenbelts. The Project would help reduce GHG emissions from vehicles in the region compared to a non-infill project.
Strategy #4	Address the housing needs of all economic segments of the population.	Consistent. With a variety of housing types and choices, the Project seeks to increase the housing supply and the mix of housing sizes, tenure, and affordability in the City. These housing types would support a range of buyers from various categories.
Strategy #5	Implement the Regional Plan through incentives and collaboration.	Not Applicable. The Project would not impair the ability of SANDAG to implement the Regional Plan through incentives and collaborations.

Source: SANDAG 2015.

Notes: VMT = vehicle miles traveled; SANDAG = San Diego Association of Governments; SR = State Route; EIR = Environmental Impact Report; Regional Plan = *San Diego Forward: The Regional Plan*.

**Table 2.4-13
Project Consistency with Scoping Plan GHG Emission Reduction Strategies**

Scoping Plan Measure	Measure Number	Project Consistency
<i>Transportation Sector</i>		
Advanced Clean Cars	T-1	The Project's residents and employees would purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase.
1.5 Million Zero-Emission and Plug-In Hybrid Light-Duty Electric Vehicles by 2025 (4.2 Million ZEVs by 2030)	Proposed	The Project includes 10 publicly accessible electric-vehicle charging stations at the Village Center.
Low Carbon Fuel Standard	T-2	Motor vehicles driven by the Project's residents and employees would use compliant fuels.
Low Carbon Fuel Standard (18% Reduction in Carbon Intensity by 2030)	Proposed	Motor vehicles driven by the Project's residents and employees would use compliant fuels.
Regional Transportation-Related GHG Targets	T-3	The Project would implement traffic calming measures and encourage use of alternative forms of transportation.
Advanced Clean Transit	Proposed	This measure does not apply to the Project.
Last Mile Delivery	Proposed	This measure does not apply to the Project.
Reduction in Vehicle Miles Traveled	Proposed	By locating various amenities on the Project site, the residents would reduce their VMT compared to typical amenities located off site. Additionally, the Project is located on an infill site, which promotes compact walkable communities with an emphasis on proximity and accessibility.
Vehicle Efficiency Measures 1. Tire Pressure 2. Fuel Efficiency Tire Program 3. Low-Friction Oil 4. Solar-Reflective Automotive Paint and Window Glazing	T-4	Motor vehicles driven by the Project's employees would be encouraged to maintain proper tire pressure. The Project's employees would replace tires in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase. Motor vehicles driven by the Project's employees would use low-friction oils when their vehicles are serviced. The Project's employees and residents would purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase.
Ship Electrification at Ports (Shore Power)	T-5	This measure does not apply to the Project.
Goods Movement Efficiency Measures 1. Port Drayage Trucks 2. Transport Refrigeration Units Cold Storage Prohibition 3. Cargo Handling Equipment, Anti-Idling, Hybrid, Electrification 4. Goods Movement Systemwide Efficiency Improvements 5. Commercial Harbor Craft Maintenance and Design Efficiency 6. Clean Ships 7. Vessel Speed Reduction	T-6	This measure does not apply to the Project.
California Sustainable Freight Action Plan	Proposed	This measure does not apply to the Project.

**Table 2.4-13
Project Consistency with Scoping Plan GHG Emission Reduction Strategies**

Scoping Plan Measure	Measure Number	Project Consistency
Heavy-Duty Vehicle GHG Emission Reduction 1. Tractor-Trailer GHG Regulation 2. Heavy-Duty Greenhouse Gas Standards for New Vehicle and Engines (Phase I)	T-7	This measure does not apply to the Project.
Medium- and Heavy-Duty Vehicle Hybridization Voucher Incentive Project	T-8	This measure does not apply to the Project.
Medium and Heavy-Duty GHG Phase 2	Proposed	This measure does not apply to the Project.
High-Speed Rail	T-9	This measure does not apply to the Project.
<i>Electricity and Natural Gas Sector</i>		
Energy Efficiency Measures (Electricity)	E-1	The Project will comply with current Title 24, Part 6, of the California Code of Regulations energy efficiency standards for electrical appliances and other devices at the time of building construction.
Energy Efficiency (Natural Gas)	CR-1	The Project will comply with current Title 24, Part 6, of the California Code of Regulations energy efficiency standards for electrical appliances and other devices at the time of building construction.
Solar Water Heating (California Solar Initiative Thermal Program)	CR-2	The Project would not employ solar water heating as part of the design.
Combined Heat and Power	E-2	This measure does not apply to the Project.
RPS (33% by 2020)	E-3	The Project would use energy supplied by SDG&E, which is in compliance with the RPS.
RPS (50% by 2050)	Proposed	The Project would use energy supplied by SDG&E, which is in compliance with the RPS.
SB 1: GoSolarCalifornia (Previously Million Solar Roofs) (California Solar Initiative, New Solar Home Partnership, Public Utility Programs) and Earlier Solar Programs	E-4	The Project would include solar roof installations for the residential buildings and the Village Center.
<i>Water Sector</i>		
Water Use Efficiency	W-1	The Project is going to use water-saving features and is expected to reduce water use compared to the existing golf course.
Water Recycling	W-2	Recycled water will be used for landscape and park irrigation.
Water System Energy Efficiency	W-3	This is applicable for the transmission and treatment of water, but it is not applicable for the Project.
Reuse Urban Runoff	W-4	The Project includes the development of rainwater catch basins and infiltration basins, which will replenish the groundwater on site.
Renewable Energy Production	W-5	Applicable for wastewater treatment systems. Not applicable for the Project.
<i>Green Buildings</i>		
1. State Green Building Initiative: Leading the Way with State Buildings (Greening New and Existing State Buildings)	GB-1	The Project would be required to be constructed in compliance with state or local green building standards in effect at the time of building construction.

**Table 2.4-13
Project Consistency with Scoping Plan GHG Emission Reduction Strategies**

Scoping Plan Measure	Measure Number	Project Consistency
2. Green Building Standards Code (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	The Project's buildings would meet green building standards that are in effect at the time of design and construction.
3. Beyond Code: Voluntary Programs at the Local Level (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	The Project would be required to be constructed in compliance with local green building standards in effect at the time of building construction.
4. Greening Existing Buildings (Greening Existing Homes and Commercial Buildings)	GB-1	This is applicable for existing buildings only and is not applicable.
<i>Industry Sector</i>		
Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	I-1	This is not applicable to the Project.
Oil and Gas Extraction GHG Emission Reduction	I-2	This is not applicable to the Project.
Reduce GHG Emissions by 20% in Oil Refinery Sector	Proposed	This is not applicable to the Project.
GHG Emissions Reduction from Natural Gas Transmission and Distribution	I-3	This is not applicable to the Project.
Refinery Flare Recovery Process Improvements	I-4	This is not applicable to the Project.
Work with the Local Air Districts to Evaluate Amendments to Their Existing Leak Detection and Repair Rules for Industrial Facilities to Include Methane Leaks	I-5	This is not applicable to the Project.
<i>Recycling and Waste Management Sector</i>		
Landfill Methane Control Measure	RW-1	This is not applicable to the Project.
Increasing the Efficiency of Landfill Methane Capture	RW-2	This is not applicable to the Project.
Mandatory Commercial Recycling	RW-3	During both construction and operation of the Project, the Project would comply with all state regulations related to solid waste generation, storage, and disposal, including the California Integrated Waste Management Act, as amended. During construction, all wastes would be recycled to the maximum extent possible.
Increase Production and Markets for Compost and Other Organics	RW-3	This is not applicable to the Project.
Anaerobic/Aerobic Digestion	RW-3	This is not applicable to the Project.
Extended Producer Responsibility	RW-3	This is not applicable to the Project.
Environmentally Preferable Purchasing	RW-3	This is not applicable to the Project.
<i>Forests Sector</i>		
Sustainable Forest Target	F-1	This is not applicable to the Project.

**Table 2.4-13
Project Consistency with Scoping Plan GHG Emission Reduction Strategies**

Scoping Plan Measure	Measure Number	Project Consistency
<i>High GWP Gases Sector</i>		
Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Servicing	H-1	The Project's employees would be prohibited from performing air conditioning repairs and would be required to use professional servicing.
SF ₆ Limits in Non-Utility and Non-Semiconductor Applications	H-2	This is not applicable to the Project.
Reduction of Perfluorocarbons in Semiconductor Manufacturing	H-3	This is not applicable to the Project.
Limit High GWP Use in Consumer Products	H-4	The Project's employees and residents would use consumer products that would comply with the regulations that are in effect at the time of manufacture.
Air Conditioning Refrigerant Leak Test During Vehicle Smog Check	H-5	Motor vehicles driven by the Project's employees would comply with the leak test requirements during smog checks.
Stationary Equipment Refrigerant Management Program – Refrigerant Tracking/Reporting/Repair Program	H-6	Applicable facilities at the Project's Village Center will comply with this requirement.
Stationary Equipment Refrigerant Management Program – Specifications for Commercial and Industrial Refrigeration	H-6	Applicable facilities at the Project's Village Center will comply with this requirement.
SF ₆ Leak Reduction Gas Insulated Switchgear	H-6	This is not applicable to the Project.
40 Percent Reduction in Methane and Hydrofluorocarbon (HFC) Emissions	Proposed	This is not applicable to the Project.
50 Percent Reduction in Black Carbon Emissions	Proposed	This is not applicable to the Project.
<i>Agriculture Sector</i>		
Methane Capture at Large Dairies	A-1	This is not applicable to the Project.

Source: CARB 2008, 2017a.

Notes: GHG = greenhouse gas; CARB = California Air Resources Board; ZEV = zero-emission vehicle; VMT = vehicle miles traveled; RPS = Renewables Portfolio Standard; SDG&E = San Diego Gas & Electric Company; SB = Senate Bill; GWP = global warming potential; SF₆ = sulfur hexafluoride.

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