

2.6. Greenhouse Gas Emissions

This section addresses potential impacts to global climate change resulting from greenhouse gas (GHG) emissions impacts that may result from construction and/or operation of the Safari Highlands Ranch (SHR) project. The following discussion addresses the existing conditions of the affected environment pertaining to GHG emissions, evaluates the SHR project’s consistency with applicable goals and policies, identifies and analyzes environmental impacts, and recommends measures to reduce or avoid adverse impacts anticipated from implementation of the project, as applicable.

The analysis in this section is based on modeling and data collected and prepared by Michael Baker International (**Appendix 2.6**). The table below summarizes the GHG emissions impacts detailed in **Section 2.6.4**.

Summary of Greenhouse Gas Emissions Impacts

Threshold Number	Issue	Determination	Mitigation Measures	Impact After Mitigation
1	Generate Significant GHG Emissions or Conflict with a GHG Plan, Policy, or Regulation	Potentially Significant Impact	GHG-1 and GHG-2	Less than Significant Impact

2.6.1. Existing Conditions

The project site is located 4 miles to the east of downtown Escondido in an unincorporated area of northeastern San Diego County, California. The City of San Diego borders the site directly to the south, and the City of Escondido borders the site to the west. The project site is approximately 30 miles north of downtown San Diego and 18 miles east of the Pacific Ocean. The project area lies within the western portion of the San Diego Air Basin (SDAB). The SDAB covers the entirety of San Diego County. The climate of the SDAB is dominated by a semi-permanent high pressure cell located over the Pacific Ocean. This cell, called the Pacific High Pressure Cell (or Zone) influences the direction of prevailing winds (westerly to northwesterly) and maintains clear skies for much of the year.

Climate Change Overview

Parts of the earth’s atmosphere act as an insulating blanket, trapping sufficient solar energy to keep the global average temperature within a range suitable for human habitation. The “blanket” is a collection of atmospheric gases called greenhouse gases (GHGs) because they trap heat similar to the effect of glass walls in a greenhouse. These gases, mainly water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), ozone, and chlorofluorocarbons, all act as effective global insulators, reflecting infrared radiation back to the earth. Human activities, such as producing electricity and driving internal combustion vehicles, emit these gases in the atmosphere.

To evaluate the incremental effect of the project on statewide GHG emissions and global climate change, it is important to have a basic understanding of the nature of the global climate change problem. Global climate change is a change in the average weather of the earth, which can be measured by wind patterns, storms, precipitation and temperature. 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.

Of late, the issue of global climate change has arguably become the most widely debated environmental issue. Climate change is a global problem and GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have much longer atmospheric lifetimes of 1 year to several thousand years that allow them to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood by scientists who study atmospheric chemistry that more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration.

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). Even though there has been increased understanding of what is likely responsible for global climate change, scientific uncertainties remain regarding the response of the Earth's climate system to changes at a local level.

2.6.2. Regulatory Framework

Federal

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:

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

Federal Vehicle Standards

In response to the US Supreme Court ruling discussed above, the George W. Bush Administration issued Executive Order 13432 in 2007 directing the US Department of

Environmental Protection (EPA), the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the 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, the 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, the EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the 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 the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 to 23 percent over the 2010 baselines.

In August 2016, the 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 metric tons and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program.

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

On October 23, 2015, the 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, the EPA published a final rule (effective October 23, 2015) establishing standards of performance for GHG emissions from new, modified, and reconstructed stationary sources: electric utility generating units (80 FR 64661–65120). The rule prescribes CO₂ emission standards for newly constructed, modified,

and reconstructed affected fossil-fuel-fired electric utility generating units. The US 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 State of California has adopted various administrative initiatives and pieces of legislation relating to climate change, much of which set aggressive goals for GHG emissions reductions in the state. Although lead agencies must evaluate climate change and GHG emissions of projects subject to the California Environmental Quality Act (CEQA), the CEQA Guidelines do not require or suggest specific methodologies for performing an assessment or specific thresholds of significance and do not specify GHG reduction mitigation measures (Title 14, California Code of Regulations Section 15064.4(a)). Instead, the guidelines allow lead agencies to choose methodologies and make significance determinations based on substantial evidence, as discussed in further detail below. No state agency has promulgated binding regulations for analyzing GHG emissions, determining their significance, or mitigating significant effects in CEQA documents. Thus, lead agencies exercise their discretion in determining how to analyze GHGs.

CEQA Guidelines Section 15064.4(b) provides factors to be considered:

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

- (1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;*
- (2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.*
- (3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.*

California Global Warming Solutions Act (Assembly Bill 32)

The primary acts that have driven GHG regulation and analysis in California include the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) (Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599), which instructs the California Air Resources Board (CARB) to develop and enforce regulations for the reporting and verifying of statewide GHG emissions. The act directed CARB to set a GHG emissions limit based on 1990 levels, to be achieved by 2020. The bill set a timeline for adopting a scoping plan for achieving GHG reductions in a

technologically and economically feasible manner. The heart of the bill is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020.

California Executive Orders

In addition, two California Executive Orders—S-3-05(2005) and B-30-15 (2015)—highlight GHG emissions reduction targets, though such targets have not been adopted by the State and remain only a goal of the Executive Orders. Specifically, Executive Order S-3-05 seeks to achieve a reduction of GHG emissions of 80 percent below 1990 levels by 2050, and Executive Order B-30-15 seeks to achieve a reduction of GHG emissions of 40 percent below 1990 levels by 2030.

Technically, a governor's Executive Order does not have the effect of new law but can only reinforce existing laws. For instance, as a result of the AB 32 legislation, the State's 2020 reduction target is backed by the adopted AB 32 Scoping Plan, which provides a specific regulatory framework of requirements for achieving the 2020 reduction target. State-led GHG reduction measures, such as the Low Carbon Fuel Standard and the Renewables Portfolio Standard, are largely driven by the AB 32 Scoping Plan. Executive Orders S-03-05 and B-30-15 do not have any such framework and provide no specific emissions reduction mechanisms.

Amendments to California Global Warming Solutions Act of 2006: Emission Limit (Senate Bill 32)

Signed into law on September 2016, Senate Bill (SB) 32 codifies the 2030 target in the recent Executive Order B-30-15 (40 percent below 1990 levels by 2030). The bill authorizes the state board to adopt an interim GHG emissions level target to be achieved by 2030. SB 32 states that the intent is for the legislature and appropriate agencies to adopt complementary policies which ensure that the long-term emissions reductions advance specified criteria. At the time of writing this document, however, no specific policies or emissions reduction mechanisms have been established.

California Building Standards Code (California Code of Regulations, Title 24)

In general, the California Building Energy Efficiency Standards require the design of building shells and building components to conserve energy. The California Energy Commission adopted changes to the 2016 Building Energy Efficiency Standards contained in the California Code of Regulations, Title 24, Part 6 (also known as the California Energy Code). The 2016 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The most significant efficiency improvements to the residential standards include improvements for attics, walls, water heating, and lighting. New efficiency requirements for elevators and direct digital controls are included in the nonresidential standards. The 2016 standards also include changes made throughout all of its sections to improve the clarity, consistency, and readability of the regulatory language.

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

standards require new residential and commercial buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics. The most recent update to the CALGreen Code went into effect January 1, 2017.

The current regulatory framework requires all new development projects in California to meet 2016 Title 24 Building Energy Efficiency Standards, which went into effect on January 1, 2017. The 2016 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings.

The most significant efficiency improvements to the residential standards include improvements for attics, walls, water heating, and lighting. The 2016 Building Energy Efficiency Standards are 28 percent more efficient than the previous 2013 standards for residential construction and 5 percent better for nonresidential construction. The 2013 standards were 25 percent more efficient than the 2010 standards for residential construction. Energy-efficient buildings require less electricity, and increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

AB 32 Scoping Plan

CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. CARB determined that achieving the 1990 emissions level would require a reduction of GHG emissions of approximately 29 percent below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as "business as usual"). The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and the state's Climate Action Team early actions and additional GHG reduction measures by both entities,¹ identifies additional measures to be pursued as regulations, and outlines the adopted role of a cap-and-trade program. Additional development of these measures and adoption of the appropriate regulations occurred through the end of 2013. Key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards.
- Achieving a statewide renewables energy mix of 33 percent by 2020.
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions.

¹ The Climate Action Team, led by the Secretary of the California Environmental Protection Agency (CalEPA), is a group of state agency secretaries and heads of agencies, boards, and departments. Team members work to coordinate statewide efforts to implement global warming emissions reduction programs and the state's Climate Adaptation Strategy.

- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, heavy-duty truck measures, and the Low Carbon Fuel Standard.
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

In 2012, CARB released revised estimates of the expected 2020 emissions reductions. The revised analysis relies on emissions projections updated in light of current economic forecasts that account for the economic downturn since 2008, reduction measures already approved and put in place relating to future fuel and energy demand, and other factors. The revisions reduced the projected 2020 emissions from 596 million metric tons (MMT) of carbon dioxide equivalents (CO₂e) to 545 MMTCO₂e.

The reduction in projected 2020 emissions means that the revised business-as-usual (BAU) reduction necessary to achieve AB 32's goal of reaching 1990 levels by 2020 is now 21.7 percent. CARB also provided a lower 2020 inventory forecast that incorporated State-led GHG emissions reduction measures already in place. When this lower forecast is considered, the necessary reduction from BAU needed to achieve the goals of AB 32 is approximately 16 percent.

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

The Scoping Plan update also looks beyond 2020 toward the 2050 goal established in Executive Order S-3-05, though not yet adopted as state law, and observes that "a mid-term statewide emission limit will ensure that the State stays on course to meet our long-term goal." The Scoping Plan update does not establish or propose any specific post-2020 goals, but identifies such goals adopted by other governments or recommended by various scientific and policy organizations. However, CARB is moving forward with a second update to the Scoping Plan to reflect the 2030 target (40 percent below 1990 levels) set by Executive Order B-30-15 and codified by SB 32.

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. 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 15126.49(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)). **Table 2.6-1** presents a brief overview of the other California legislation relating to climate change that may affect emissions associated with the proposed project.

Table 2.6-1 California Climate Change Legislation

Legislation	Description
Assembly Bill 1493 and Advanced Clean Cars Program	Assembly Bill 1493 (the Pavley Standard) (Health and Safety Code Sections 42823 and 43018.5) aims to reduce GHG emissions from noncommercial passenger vehicles and light-duty trucks of model years 2009–2016. By 2025, when all rules will be fully implemented, new automobiles will emit 34 percent fewer CO ₂ e emissions and 75 percent fewer smog-forming emissions.
Low Carbon Fuel Standard (LCFS)	Executive Order S-01-07 (2007) requires a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California. The regulation took effect in 2010 and is codified at Title 17, California Code of Regulations, Sections 95480–95490. The LCFS will reduce GHG emissions by reducing the carbon intensity of transportation fuels used in California by at least 10 percent by 2020.
Renewables Portfolio Standard (Senate Bill X1-2 & Senate Bill 350)	California’s Renewables Portfolio Standard (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020. The 33 percent standard is consistent with the RPS goal established in the Scoping Plan. The passage of Senate Bill 350 in 2015 updates the RPS to require the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. The bill will make other revisions to the RPS program and to certain other requirements on public utilities and publicly owned electric utilities.
Senate Bill 375	<p>Senate Bill (SB) 375 (codified in the Government Code and the Public Resources Code) took effect in 2008 and provides a new planning process to coordinate land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals established in AB 32. SB 375 requires metropolitan planning organizations (MPOs) to incorporate a Sustainable Communities Strategy in their Regional Transportation Plans that will achieve GHG emissions reduction targets by reducing vehicle miles traveled from light-duty vehicles through the development of more compact, complete, and efficient communities.</p> <p>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 percent reduction in emissions per capita by 2020 and a 13 percent reduction by 2035.</p> <p>SANDAG completed and adopted its 2050 Regional Transportation Plan/Sustainable Communities Strategy 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.</p> <p>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. In December 2015, CARB, by resolution, accepted SANDAG’s GHG emissions quantification analysis and determination that, if</p>

Table 2.6-1, continued

Legislation	Description
	<p>implemented, the Regional Plan would achieve CARB's 2020 and 2035 GHG emissions reduction targets for the region.</p> <p>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.</p>
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 percent below 1990 levels by 2050.
Executive Order 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 percent 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 percent 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 MMTCO _{2e} . 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 percent 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 short lived climate pollutants (SLCP) 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 percent below 2013 levels by 2030 for CH ₄ and HFCs, and 50 percent 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, CH ₄ , and fluorinated gases.

Table 2.6-1, continued

Legislation	Description
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 1190	Enacted in 2007, AB 1109 required the CEC to adopt minimum energy efficiency standards for general purpose lighting, to reduce electricity consumption 50 percent for indoor residential lighting and 25 percent for indoor commercial lighting.
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 percent of new homes within 13 years of adoption. SB 1, also termed “GoSolarCalifornia,” was previously titled “Million Solar Roofs.”

* Senate Bill 375 is codified at Government Code Sections 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588, 14522.1, 14522.2, and 65080.01, as well as at Public Resources Code Sections 21061.3 and 21159.28 and Chapter 4.2.

Local

City of Escondido General Plan

The City’s General Plan (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

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

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.

Mobility and Infrastructure

16. Energy and Policy

Energy and Policy 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

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

City of Escondido Climate Action Plan

The Escondido Climate Action Plan (E-CAP) was designed under the premise that the City of Escondido and the community it represents are uniquely capable of addressing emissions

associated with sources under the City’s jurisdiction. Escondido’s emissions reduction efforts coordinate with state strategies in order to accomplish emissions reductions in an efficient and cost-effective manner.

As previously described, statewide goals for GHG reductions in the years beyond 2020 have been recently codified into state law with the passage of SB 32. However, at the time of writing this document, no specific policies or emissions reduction mechanisms have been established. Therefore, while project design can contribute to reducing potential GHG emissions from the proposed project, achievement of future GHG efficiency standards is also dependent on regulatory controls applied to all sectors of the California economy. Thus, the ability of this project—and all land use development—to achieve statewide GHG reduction goals beyond 2020 is partially out of the control of the project and its proponents.

Nonetheless, even though the E-CAP was drafted before SB 32, this analysis and the E-CAP estimate emissions beyond 2020 as informed by Executive Orders B-30-15 and S-3-05. The E-CAP includes GHG-reducing policy provisions targeted at reducing GHG emissions beyond the year 2020. Project compliance with the E-CAP reduction goals and measures establishes project compliance not only with statewide GHG-reduction goals for the year 2020 associated with AB 32 but also with statewide GHG-reduction goals for the years beyond 2020.

The E-CAP states that if the project exceeds 2,500 MT CO₂e, the project must either achieve 100 points from the GHG Plan Screening Tables (see **Table 2.6-4**) or include project-specific quantification of GHG emissions and measures reducing GHG emissions consistent with the E-CAP. Note that the E-CAP largely addresses the reduction of GHG emissions from an energy efficiency perspective and not from vehicle miles traveled and mobile source GHG emissions reductions.

2.6.3. Thresholds for Determination of Significance

Appendix G of the CEQA Guidelines as amended contain analysis guidelines related to the assessment of GHG emissions. A project would result in a significant impact if it would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (or conflict with applicable greenhouse gas emissions thresholds) or otherwise conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

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 (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 on 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 buildout year and the buildout year’s associated efficiency metric. To that end, an efficiency metric was calculated based on the 2025 emissions level (year of project buildout) and the project’s service population (sum of the 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 buildout year (2025), an efficiency metric was generated by interpolating the efficiency metrics for years 2020 and 2035. As illustrated below, the efficiency metric is first calculated for 2020 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 buildout year (2025), using the 5.2 percent rate of average annual decline identified by CARB as necessary to achievement of SB 32’s 2030 reduction target (40 percent below 1990 levels) and EO S-3-05’s 2050 reduction target (80 percent below 1990 levels).

To develop the 2020 efficiency metric, the City’s 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 City’s forecast population, which is consistent with the assumptions in the E-CAP. To determine City specific 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 forecast emissions in 2020, as provided in the E-CAP, were reduced by 5.2 percent per year through 2035. 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 City specific efficiency metrics for 2020, 2035, and the interpolation for 2025 are illustrated in **Table 2.6-2, 2025 Interpolated City Specific Efficiency Metric**. If the project achieves the 2025 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.

Table 2.6-2 2025 Interpolated City Specific Efficiency Metric

	2020 Efficiency Metric (MT/SP/yr)	2035 Efficiency Metric (MT/SP/yr)	2025 Efficiency Metric^a (MT/SP/yr)
2025 Efficiency Metric – CARB Annual Reduction	3.56	1.53	2.89

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

^a The 2025 efficiency metric was calculated as follows: $((2035 \text{ Employment Metric} - 2020 \text{ Employment Metric}) \div (2035 - 2020)) \times ((2025 - 2020) + 2020 \text{ Efficiency Metric})$.

The efficiency metric for 2025 is 2.89 metric tons per service population per year (MT/SP/yr). If the project achieves the 2025 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.

2.6.4. Analysis of Project Effects and Determination of Significance

Threshold 1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment (or conflict with applicable greenhouse gas emissions thresholds) or otherwise conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Project-Related Sources of Greenhouse Gas Emissions

Project-related GHG emissions would include emissions from direct and indirect sources. The proposed project would result in direct and indirect emissions of CO₂, N₂O, and CH₄, and would not result in other GHGs that would facilitate a meaningful analysis. Other GHGs, such as perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and trichloroethane, are consumed in industrial processes and are not associated with residential uses. Therefore, this analysis focuses on these three forms of GHG emissions. Direct project-related GHG emissions include emissions from construction activities, area sources, and mobile sources, while indirect sources include emissions from electricity consumption, water demand, and solid waste generation.

Development of the site would occur in four planned phases. Depending on the market at the time development of each phase is undertaken, construction of the individual phases may overlap so that the available inventory of residential lots is able to meet demands. However, it is anticipated that the project would be phased over an approximate 5-year period and would be completed in 2025. Proposed grading activities would affect approximately 339 acres. Grading activities would be short term and would cease following the completion of construction activities. Off-road emissions would result from the use of heavy duty construction equipment such as excavators, dozers, scrapers, tractors, loaders, and backhoes.

Operational GHG estimations are based on energy emissions from natural gas usage and automobile emissions. Automobile emissions are derived from trip generation data. As indicated in the Transportation Impact Analysis prepared for SHR, the proposed project would generate an estimated 5,907 new daily trips (LL&G 2017). The California Emissions Estimator Model (CalEEMod) was used to determine direct and indirect GHG emissions. CalEEMod relies on project-specific land use data to calculate emissions. **Table 2.6-3** presents the approximate quantity of annual GHG emissions generated by the project. Refer also to **Appendix 2.6**, which provides the modeling data used in estimating operational GHG emissions for the project.

Table 2.6-3 Estimated Greenhouse Gas Emissions

Emissions Type	CO ₂ e (MT per year)	Percentage of Total Emissions
Construction (amortized over 30 years)	654	5%
Area Source (landscaping, hearth)	430	3%
Energy	1,910	15%
Mobile	9,213	73%
Waste	175	1%
Water	305	2%
Total	12,687	100%¹

Refer to **Appendix 2.6** for detailed model input/output data.

¹ Total for Percentage of Total Emissions has been rounded up.

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 from Appendix G, the project is assessed based on its potential to conflict with the City’s E-CAP, SANDAG’s Regional Plan/SCS, and CARB’s 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.

E-CAP GHG Plan Screening Table and Consistency Determination

Since the project’s annual GHG emissions exceed 2,500 MT CO₂e, the Escondido Climate Action Plan GHG Plan Screening Table method, shown below in **Table 2.6-4**, is used to determine whether the project is consistent with the E-CAP. As previously stated, projects

that exceed 2,500 MT CO₂e must achieve 100 points from the GHG Plan Screening Tables (Escondido 2013b, page 7-9). This is done by demonstrating increases beyond specific requirements contained in the 2010 Title 24 Building Efficiency Standards (see **Table 2.6-4**). The baseline year of the E-CAP is 2010.

Table 2.6-4 Screening Table for Implementation of GHG Reduction Measures for Residential Development

Feature	Description	Assigned Point Values
Insulation	Title 24 standard (required) Modestly Enhanced Insulation (5% > Title 24) Enhanced Insulation (15% > Title 24) Greatly Enhanced Insulation (20% > Title 24)	0 points 2 points 6 points 8 points
Windows	Title 24 standard (required) Modestly Enhanced Window Insulation (5% > Title 24) Enhanced Window Insulation (15% > Title 24) Greatly Enhanced Window Insulation (20% > Title 24)	0 points 2 points 6 points 8 points
Doors	Title 24 standard (required) Modestly Enhanced Insulation (5% > Title 24) Enhanced Insulation (15% > Title 24) Greatly Enhanced Insulation (20% > Title 24)	0 points 2 points 6 points 8 points
Air Infiltration	Minimizing leaks in the building envelope is as important as the insulation properties of the building. Insulation does not work effectively if there is excess air leakage. Title 24 standard (required) Modest Building Envelope Leakage (5% > Title 24) Reduced Building Envelope Leakage (15% > Title 24) Minimum Building Envelope Leakage (20% > Title 24)	0 points 2 points 6 points 8 points
Thermal Storage of Building	Thermal storage is a design characteristic that helps keep a constant temperature in the building. Common thermal storage devices include strategically placed water filled columns, water storage tanks, and thick masonry walls. Thermal storage designed to reduce heating/cooling by 5°F within the building. Thermal storage to reduce heating/cooling by 10°F within the building Note: Engineering details must be provided to substantiate the efficiency of the thermal storage device.	5 points 9 points
Building Envelope Performance Standard	Alternatively, projects that have not been designed to a level of detail to know the specific attributes of the building envelope needed to utilize the points for the measures listed above can use this option instead in committing to one of the following performance standards: Modestly Enhanced building envelope (5% > Title 24) Enhanced building envelope (15% > Title 24) Greatly Enhanced building envelope (20% > Title 24)	8 points 24 points 32 points

Table 2.6-4, continued

Feature	Description	Assigned Point Values
Heating/Cooling Distribution System	Title 24 standard (required)	0 points
	Modest Distribution Losses (5% > Title 24)	2 points
	Reduced Distribution Losses (15% > Title 24)	6 points
	Greatly Reduced Distribution Losses (15% > Title 24)	8 points
Space Heating/Cooling Equipment	Title 24 standard (required)	0 points
	Efficiency HVAC (5% > Title 24)	2 points
	High Efficiency HVAC (15% > Title 24)	6 points
	Very High Efficiency HVAC (20% > Title 24)	8 points
Water Heaters	Title 24 standard (required)	0 points
	Efficiency Water Heater (Energy Star conventional that is 5% > Title 24)	2 points
	High Efficiency Water Heater (conventional water heater that is 15% > Title 24)	6 points
	High Efficiency Water Heater (conventional water heater that is 20% > Title 24)	8 points
	Solar Water Heating System	11 points
Daylighting	Daylighting is the ability of each room within the building to provide outside light during the day reducing the need for artificial lighting during daylight hours.	
	All peripheral rooms within the living space have at least one window (required).	0 points
	All rooms within the living space have daylight (through use of windows, solar tubes, skylights, etc.) such that each room has at least 800 lumens of light during a sunny day	2 points
	All rooms daylighted to at least 1,000 lumens	4 points
Artificial Lighting	Title 24 standard (required)	0 points
	Efficient Lights (5% > Title 24)	2 points
	High Efficiency Lights (LED, etc. 15% > Title 24)	6 points
	Very High Efficiency Lights (LED, etc. 20% > Title 24)	8 points
Appliances	Title 24 standard (required)	0 points
	Efficient Appliances (5% > Title 24)	2 points
	High Efficiency Energy Star Appliances (15% > Title 24)	6 points
	Very High Efficiency Appliances (20% > Title 24)	8 points
Indoor Space Performance Standard	Alternatively, projects that have not been designed to a level of detail to know the specific attributes of the interior design of the buildings needed to utilize the points for the features listed above can use this option instead in committing to one of the following performance standards:	
	Modestly Enhanced Interior and appliances (5% > Title 24)	12 points
	Enhanced Interior and appliances (15% > Title 24)	32 points
	Greatly Enhanced Interior and appliances (20% > Title 24)	44 points
Building Placement	North/south alignment of building or other building placement such that the orientation of the buildings optimizes natural heating, cooling, and lighting	3 points

Table 2.6-4, continued

Feature	Description	Assigned Point Values
Independent Energy Efficiency Calculations	Provide point values based upon energy efficiency modeling of the project. Note that engineering data will be required documenting the energy efficiency and point values based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD
Other	This allows innovation by the applicant to provide design features that increases the energy efficiency of the project not provided in the table. Note that engineering data will be required documenting the energy efficiency of innovative designs and point values given based upon the proven efficiency beyond Title 24 Energy Efficiency Standards.	TBD
Existing Residential Retrofits	<p>The applicant may wish to provide energy efficiency retrofit projects to existing residential dwelling units to further the point value of their project. Retrofitting existing residential dwelling units within the city is a key reduction measure that is needed to reach the reduction goal. The potential for an applicant to take advantage of this program will be decided on a case by case basis and must have the approval of the Escondido Planning Department. The decision to allow applicants to ability to participate in this program will be evaluated based upon, but not limited to the following:</p> <p>Will the energy efficiency retrofit project benefit low income or disadvantaged residents?</p> <p>Does the energy efficiency retrofit project fit within the overall assumptions in Reduction Measure R2 E3?</p> <p>Does the energy efficiency retrofit project provide co-benefits important to the City?</p> <p>Point value will be determined based upon engineering and design criteria of the energy efficiency retrofit project.</p>	TBD
Photovoltaic	<p>Solar photovoltaic panels installed on individual homes or in collective neighborhood arrangements such that the total power provided augments:</p> <p>Solar Ready Homes (sturdy roof and electric hookups)</p> <p>10 percent of the power needs of the project</p> <p>20 percent of the power needs of the project</p> <p>30 percent of the power needs of the project</p> <p>40 percent of the power needs of the project</p> <p>50 percent of the power needs of the project</p> <p>60 percent of the power needs of the project</p> <p>70 percent of the power needs of the project</p> <p>80 percent of the power needs of the project</p> <p>90 percent of the power needs of the project</p> <p>100 percent of the power needs of the project</p>	<p>1 point</p> <p>9 points</p> <p>14 points</p> <p>19 points</p> <p>27 points</p> <p>34 points</p> <p>37 points</p> <p>41 points</p> <p>45 points</p> <p>49 points</p> <p>55 points</p>

Table 2.6-4, continued

Feature	Description	Assigned Point Values
Wind turbines	<p>Some areas of the city lend themselves to wind turbine applications. Analysis of the area's capability to support wind turbines should be evaluated prior to choosing this feature.</p> <p>Individual wind turbines at homes or collective neighborhood arrangements of wind turbines such that the total power provided augments:</p> <p>10 percent of the power needs of the project 20 percent of the power needs of the project 30 percent of the power needs of the project 40 percent of the power needs of the project 50 percent of the power needs of the project 60 percent of the power needs of the project 70 percent of the power needs of the project 80 percent of the power needs of the project 90 percent of the power needs of the project 100 percent of the power needs of the project</p>	<p>9 points 14 points 19 points 27 points 34 points 37 points 41 points 45 points 49 points 55 points</p>
Off-Site Renewable Energy Project	<p>The applicant may submit a proposal to supply an off-site renewable energy project such as renewable energy retrofits of existing homes that will help implement R2 E4. These off-site renewable energy retrofit project proposals will be determined on a case by case basis and must be accompanied by a detailed plan that documents the quantity of renewable energy the proposal will generate. Point values will be determined based upon the energy generated by the proposal.</p>	TBD
Other Renewable Energy Generation	<p>The applicant may have innovative designs or unique site circumstances (such as geothermal) that allow the project to generate electricity from renewable energy not provided in the table. The ability to supply other renewable energy and the point values allowed will be decided based upon engineering data documenting the ability to generate electricity.</p>	TBD
Water Efficient Landscaping	<p>Limit conventional turf to <20% of each lot (required) Eliminate conventional turf from landscaping Eliminate turf and only provide drought tolerant plants Xeroscaping that requires no irrigation (after plants are established)</p>	<p>0 points 2 points 3 points 5 points</p>
Water Efficient Irrigation Systems	<p>Drip irrigation Smart irrigation control systems combined with drip irrigation (demonstrate 20 reduced water use)</p>	<p>1 point 2 points</p>
Recycled Water	<p>Graywater (purple pipe) irrigation system on site</p>	3 points
Stormwater Reuse Systems	<p>Innovative on-site stormwater collection, filtration and reuse systems are being developed that provide supplemental irrigation water and provide vector control. These systems can greatly reduce the irrigation needs of a project. Point values for these types of systems will be determined based upon design and engineering data documenting the water savings.</p>	TBD
Showers	<p>Title 24 standard (required) EPA High Efficiency Showerheads (15% > Title 24)</p>	<p>0 points 2 points</p>

Table 2.6-4, continued

Feature	Description	Assigned Point Values
Toilets	Title 24 standard (required) EPA High Efficiency Toilets (15% > Title 24)	0 points 2 points
Faucets	Title 24 standard (required) EPA High Efficiency faucets (15% > Title 24)	0 points 2 points
Potable Water Performance Standard	Alternatively, projects that have not been designed to a level of detail to know the specific attributes of the interior design of the buildings needed to utilize the points for the features listed above can use this option instead in committing to a potable water supply performance standard: EPA High Efficiency water fixtures (15% > Title 24)	6 points
Mixed Use	Mixes of land uses that complement one another in a way that reduces the need for vehicle trips can greatly reduce GHG emissions. The point value of mixed use projects will be determined based upon a Transportation Impact Analysis (TIA) demonstrating trip reductions and/or reductions in vehicle miles traveled. Suggested ranges: <ul style="list-style-type: none"> • Diversity of land uses complementing each other (2–28 points) • Increased destination accessibility other than transit (1–18 points) • Increased transit accessibility (1–25 points) • Infill location that reduces vehicle trips or VMT beyond the measures described above (points TBD based on traffic data). 	TBD
Residential Near Local Retail (Residential only Projects)	Having residential developments within walking and biking distance of local retail helps to reduce vehicle trips and/or vehicle miles traveled. The point value of residential projects in close proximity to local retail will be determined based upon traffic studies that demonstrate trip reductions and/or reductions in vehicle miles traveled (VMT).	TBD
Other Trip Reduction Measures	Other trip or VMT reduction measures not listed above with TIA and/or other traffic data supporting the trip and/or VMT for the project.	TBD
Bicycle Infrastructure	Escondido’s Bicycle Master Plan is extensive and describes the construction on 11.5 miles of Class I bike paths and 23 miles of Class II and Class III bikeways to build upon the current 8 miles of bikeways. Provide bicycle paths within project boundaries. Provide bicycle path linkages between residential and other land uses. Provide bicycle path linkages between residential and transit.	TBD 3 points 5 points
Electric Vehicle Recharging	Provide circuit and capacity in garages of residential units for use by an electric vehicle. Charging stations are for on-road electric vehicles legally able to drive on all roadways including Interstate Highways and freeways. Provide connections to neighborhood electric vehicle (NEV) approved roads and bicycle lanes. NEVs are similar in size to golf carts and run entirely on electricity with maximum speeds between 30 to 60 MPH. They are not legal to drive on public roadways except when that roadway is NEV approved. NEV approved roads are those roadways with class I, class II, or class III bicycle lanes. The NEV must drive within the bicycle lane on these types of roadways.	1 point 4 points

Source: Escondido 2013b

In order to be designated consistent with the E-CAP, the project must achieve at least 100 points from the GHG Plan Screening Table (**Table 2.6-4**). The purpose of the menu of options in the GHG Plan Screening Table is to allow “for maximum flexibility for projects to meet their reduction allocation balancing the need to reduce emissions while maintaining a business friendly environment that keeps the City of Escondido competitive for development” (Escondido 2013a, pp. 7-10).

Because the Safari Highlands Ranch Specific Plan and supporting documentation do not currently provide specific details about which of the GHG emissions reduction strategies will be employed at the time of project construction, the proposed project cannot be determined to achieve 100 points at this time and therefore cannot be determined to be consistent with the E-CAP. Accordingly, impacts are **potentially significant**. Implementation of mitigation measure **MM GHG-1** is required to reduce potential significant impacts to a **less than significant** level by requiring that the project employ a combination of designated features and measures that achieve 100 points from the GHG Plan Screening Table.

It should be noted that where a project does not use the screening tables, the project is required to quantify its unmitigated emissions and provide a 20.6 percent reduction of those emissions in order to be considered less than significant (Escondido 2013b, page 5). The project-specific technical analysis attached as **Appendix 2.6**, summarized above in **Table 2.6-3**, calculates the proposed project’s GHG emissions without mitigation; however, reductions from 2016 Title 24 improvements (over 2013 Title 24) and renewable portfolio standards are included.

Although the Safari Highlands Ranch Specific Plan and supporting documentation do not currently provide specific details about which of the GHG emissions reduction strategies from the screening tables in the E-CAP will be employed, all new development, including that proposed by the project, will exceed the 2010 Building Energy Efficiency Standards by approximately 46 percent simply by complying with the 2016 Title 24 standards. As such, it is possible that 100 points from the screening tables could be achieved simply by complying with the current Title 24 standards. Furthermore, as the Title 24 standards are updated every three years, the project would likely be required to comply with a more stringent 2019 version of the building code.

In addition, as stated in **Section 1.0, Project Description**, of this EIR, homeowners residing within the project would have the option to upgrade to advanced water recycling systems, water-recycling dishwashers, “greywater” heat recovery systems, efficient air ventilation and purification systems, and/or “fuel forward” garages with electric vehicle chargers for electric and hybrid vehicles or compressed natural gas (CNG) fueling stations for natural gas-powered cars.

Lastly, all homes are proposed to be pre-wired for optional installation of solar panels. Other energy-saving features incorporated into the proposed development are anticipated to include drought-tolerant landscaping, low water and recycled water irrigation systems, and provision of bike lanes, bike racks, and bus stops.

As discussed above, AB 32 required a reduction of GHG emissions of approximately 29 percent from business as usual by 2020 in order to achieve 1990 levels. Business as usual is defined as the emissions that would have occurred in the absence of reductions mandated

under AB 32. For the proposed project, business as usual is considered the emissions that would be generated assuming compliance with California Code of Regulations (CCR) Title 24 as of 2010. Single-family homes built to the 2016 standards will use about 28 percent less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards (CEC 2015).

The original 2013 version of the standard mandated increased energy efficiency performance of 25 percent and 30 percent over 2008 standards (which were not enforced until 2010) for residential and nonresidential property, respectively (CEC 2014). Therefore, implementation of the proposed project would result in a reduction of energy-related emissions from business as usual projections by approximately 46 percent. However, per **Table 2.6-3**, energy-related emissions represent 15 percent of the project's GHGs. Therefore, a 46 percent reduction in energy consumption would reduce overall project emissions by approximately 7 percent. Vehicle trips (mobile sources) equate to 73 percent of the project's GHGs, which would not be affected by Title 24 improvements.

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 2025 (as shown in **Table 2.6-2**) is 2.89 MT/SP/yr. According to the San Diego Association of Governments (SANDAG), current population and housing estimates, the average number of persons per household in Escondido is 3.3 (SANDAG 2016). Considering this estimate, it is anticipated that the SHR project would house approximately 1,815 residents.

Using the estimated operational emissions of 12,687 MT CO_{2e} (refer to **Table 2.6-3**) and service population of 1,815, the project would have a GHG efficiency metric of 7.0 MT/SP/yr. The project's efficiency metric would exceed the significance threshold efficiency metric of 2.89 MT/SP/yr. Therefore, the project would result in a **potentially significant** impact. Implementation of mitigation measure **MM GHG-2** is required to reduce potentially significant impacts to a **less than significant** level by requiring that the project purchase GHG emissions compliance offsets to reach the 2.89 MT/SP/yr efficiency metric threshold.

Consistency with the E-CAP

As discussed previously, with mitigation measure **MM GHG-1**, the project would be consistent with the City's E-CAP as demonstrated using the screening tables. Additionally, mitigation measure **MM GHG-2** is required to reduce potentially significant mobile source impacts to be consistent with post-2020 reduction targets. As the project would achieve over 100 points using the screening tables (**MM GHG-1**) and purchase GHG emissions compliance offsets to meet post-2020 reduction targets (**MM GHG-2**), it would be 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 implementation of mitigation measures **GHG-1** and **GHG-2**, implementation of the project would not result in emissions in excess of those anticipated in the E-CAP. 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

As previously stated, 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.

Regarding consistency with the Regional Plan, the project would include site design elements and project design features developed to support the policy objectives of the RTP and SB 375. For example, the project includes approximately 629 acres of open space preservation for the purpose of resource protection (including sensitive habitats and species) and over 9 miles of an integrated walking and bicycling trail system that will connect the various components of the project. An additional 128 acres of HOA managed habitat open space is also proposed.

In addition, traffic calming measures have been proposed for Safari Highlands Ranch Road to 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. Additionally, this project would incorporate options for homeowners to upgrade to “fuel forward” garages with electric charges for electric and hybrid vehicles or compressed natural gas (CNG) fueling stations for natural gas-powered cars. All homes would have the option to produce solar power as the homes would be pre-wired for optional installation of solar panels. **Table 2.6-5, San Diego Forward: The Regional Plan Consistency Analysis**, illustrates the project’s consistency with applicable goals and policies of the Regional Plan (SANDAG 2015).

However, implementation of the proposed project would be inconsistent with the current RTP/SCS because the density proposed is greater than what was included in the land use input assumptions from the County of San Diego. Because the project is proposing a higher density development than was planned, it is correspondingly also proposing an increase of units over that proposed in the SCS/RTP. Therefore, the project would be inconsistent with the Regional Plan and impacts would be **potentially significant**. Implementation of mitigation measure **MM GHG-2** is required to reduce potentially significant impacts to a **less than significant** level by requiring that the project purchase GHG emissions compliance offsets to reach the 2.89 MT/SP/yr efficiency metric threshold.

Table 2.6-5 San Diego Forward: The Regional Plan Consistency Analysis

Category	Policy Objective or Strategy	Consistency Analysis
The Regional Plan – Policy Objectives		
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 a system of over 9 linear miles of public and private parks and trails. The interconnected series of walkways and trails is proposed to provide connection between the residential neighborhoods, as well as to the Village Core, recreational amenities, and other areas of the development. Additionally, all neighborhoods would be interconnected through the proposed community trail system so that residents and the public can have access through the surrounding open space lands via preexisting rural pathways, dirt roads, and utility easements.</p> <p>Bike lanes and a pedestrian path would be accommodated in the construction of Safari Highlands Ranch Road.</p>
Mobility Choices	Take advantage of new technologies to make the transportation system more efficient and environmentally friendly.	<p>Consistent. The project would include the option for homeowners to upgrade to “fuel forward” garages with electric charges for electric and hybrid vehicles or compressed natural gas (CNG) fueling stations for natural gas-powered cars. Additionally, all homes are proposed to be pre-wired for optional installation of solar panels.</p>
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.	<p>Not Consistent. The project would be located in a rural area approximately 30 miles north of downtown San Diego and over 4 miles east of downtown Escondido.</p>
Habitat and Open Space Preservation	Protect and restore our region’s urban canyons, coastlines, beaches, and water resources.	<p>Consistent. The project would provide housing opportunities in a rural setting that is consistent with the City of Escondido 2013–2021 Housing Element, including the goals and objectives of the Regional Housing Needs Assessment, while minimizing environmental effects and preserving surrounding open space and habitat. Approximately 629 acres of on-site open space would be preserved for the purpose of resource protection, including sensitive habitats and species. An additional 128 acres of HOA managed habitat open space is also proposed. The cluster development would help preserve open space, minimize the visual impacts associated with development, and decrease grading in environmentally sensitive areas.</p>
Regional Economic Prosperity	Invest in transportation projects that provide access for all communities to a variety of jobs with competitive wages.	<p>Not Applicable. The project would not impair SANDAG’s ability to invest in transportation projects available to all members of the community.</p>

Table 2.6-5, continued

Category	Policy Objective or Strategy	Consistency Analysis
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 SANDAG's ability to provide transportation choices to better connect the San Diego region with Mexico, neighboring counties, and tribal nations.
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 SANDAG's ability to provide transportation choices to better connect the San Diego region with Mexico.
Healthy and Complete Communities	Create great places for everyone to live, work, and play.	Consistent. The project proposes new residential and resident-serving development in a rural setting that would integrate over 9 miles of public and private trails, parks, and recreational amenities, thereby encouraging non-vehicular modes of transportation through the extensive walking trail system.
Healthy and Complete Communities	Connect communities through a variety of transportation choices that promote healthy lifestyles, including walking and biking.	Consistent. The project's internal circulation features would offer residents the opportunity to access recreational uses via walking trails or bike lanes. The project would also encourage non-vehicular modes of transportation through the inclusion of an extensive walking trail system.
Environmental Stewardship	Make transportation investments that result in cleaner air, environmental protection, conservation, efficiency, and sustainable living.	Consistent. The project would encourage non-vehicular modes of transportation through the inclusion of bike lanes and an extensive walking trail system within the community. Additionally, the project would include the option for homeowners to upgrade to "fuel forward" garages with electric charges for electric and hybrid vehicles or compressed natural gas (CNG) fueling stations for natural gas-powered cars. All homes would be pre-wired for the option of solar panel installation.
Environmental Stewardship.	Support energy programs that promote sustainability.	Consistent. The project would have the option to include on-site renewable energy production through solar photovoltaic rooftop systems for all residential units.

Table 2.6-5, continued

Category	Policy Objective or Strategy	Consistency Analysis
The Regional Plan – Policy Objectives		
Strategy #1	Focus housing and job growth in urbanized areas where there is existing and planned transportation infrastructure, including transit.	Not Consistent. The project would be located in a rural area approximately 30 miles north of downtown San Diego and over 4 miles east of downtown Escondido.
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's open space design would preserve 629 acres for the purpose of resource protection, including sensitive habitats and species. An additional 128 acres of HOA managed habitat open space is also proposed. The cluster development would help preserve open space, minimize the visual impacts associated with development, and decrease grading in environmentally sensitive areas.
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 trail system within the community.
Strategy #4	Address the housing needs of all economic segments of the population.	Not Consistent. The project does not incorporate housing needs for all economic segments of the population.
Strategy #5	Implement the Regional Plan through incentives and collaboration.	Not Applicable. The project would not impair SANDAG's ability of 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*.

Mitigation Measures

MM GHG-1 The following energy efficiency features, or any other combination of measures from the City's E-CAP list in **Table 2.6-4**, shall be employed to achieve 100 or more points. All features shall be incorporated into construction plans and specifications, development agreements, and/or other mechanisms that demonstrate the applicant and/or builder is legally bound to implement them.

- Greatly Enhanced Insulation (20% > Title 24)
- Greatly Enhanced Window Insulation (20% > Title 24)
- Greatly Enhanced Door Insulation (20% > Title 24)
- Minimum Building Envelope Leakage (20% > Title 24)
- Greatly Enhanced Building Envelope (20% > Title 24)
- Greatly Reduced Distribution Losses (20% > Title 24)
- Very High Efficiency HVAC (20% > Title 24)

- High Efficiency Water Heater (conventional water heater that is 20% > Title 24)
- Very High Efficiency Lights (LED, etc. 20% > Title 24)
- Very High Efficiency Appliances (20% > Title 24)
- Greatly Enhanced Interior and Appliances (20% > Title 24)
- Solar Ready Homes (sturdy roof and electric hookups)
- EPA High Efficiency Showerheads (15% > Title 24)
- EPA High Efficiency Toilets (15% > Title 24)
- EPA High Efficiency Faucets (15% > Title 24)
- EPA High Efficiency Water Fixtures (15% > Title 24)

Timing/Implementation: *Implemented during construction activities*

Enforcement/Monitoring: *City of Escondido Engineering and Planning Divisions*

MM GHG-2 The applicant or its designee shall purchase and retire greenhouse gas (GHG) offsets to reduce the project’s GHG emissions level to 2.89 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.
- Recognizing that future regulatory mandates, technological advances, and/or final project design features would likely result in GHG emissions that are lower than the levels presented in this EIR, the applicant may prepare a final project GHG emissions inventory prior to City issuance of the 275th certificate of occupancy (representing 50 percent project completion). The inventory shall be subject to verification by a City-approved third party (at applicant expense), with the final emissions estimates dictating the increment to be mitigated through purchase of GHG offsets. The offsets must also be secured by the applicant and verified by the City prior to issuance of the 275th certificate of occupancy, thus providing full mitigation prior to completion of the project.

Timing/Implementation: Prior to City issuance of the 275th certificate of occupancy

Enforcement/Monitoring: City of Escondido Engineering and Planning Divisions

Level of Significance After Mitigation

Mitigation measure **MM GHG-1** would ensure that the proposed project achieves energy efficiency and associated GHG emissions reduction objectives to be determined consistent with the Escondido Climate Action Plan. With implementation of this mitigation measure, resulting impacts would be **less than significant**.

With implementation of mitigation measure **MM GHG-2**, the project would offset 7,442 MT CO₂e per year over the project's lifetime, for a total of 223,250 MT CO₂e.² The project's GHG emission would be reduced to a level below the efficiency metric of 2.89 MT/SP/year, which would be consistent with the GHG emission statewide reduction goals for 2030 and 2050. Therefore, after mitigation impacts would be **less than significant**.

² It should be noted that these emissions are based on modeling and project-specific features and technology known at the time this document was prepared. Future technology or design features may reduce the level of emissions that would need to be mitigated.

2.6.5. Sources Cited

- California Department of Finance. 2017. *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011–2017 with 2010 Census Benchmark*.
<http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/>.
- CARB. 2015b. 2030 Target Scoping Plan Public Meeting Presentation. October 1. Accessed August 2017.
https://www.arb.ca.gov/cc/scopingplan/meetings/10_1_15slides/2015slides.pdf.
- CEC (California Energy Commission). 2014. *News Release: New Title 24 Standards Will Cut Residential Energy Use by 25 Percent, Save Water, and Reduce Greenhouse Gas Emissions*, July 1, 2014.
- . 2015. *2016 Building Energy Efficiency Standards Adoption Hearing Presentation*, June 10.
- EPA (US Environmental Protection Agency). 2007. Energy Independence and Security Act of 2007. <https://www.gpo.gov/fdsys/pkg/BILLS-110hr6enr/pdf/BILLS-110hr6enr.pdf>
- . 2017. Final Determination on the Appropriateness of the Model Year 2022-2025 Light Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation. January. <https://www.epa.gov/sites/production/files/2017-01/documents/420r17001.pdf>.
- EPA and NHTSA (US Environmental Protection Agency and National Highway Traffic Safety Administration). 2016. Regulations and Standards: Heavy-Duty. EPA and DOT Finalize Greenhouse Gas and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles. <https://www3.epa.gov/otaq/climate/regs-heavy-duty.htm>.
- Escondido, City of. 2012. *General Plan*. <https://www.escondido.org/general-plan.aspx>.
- . 2013a. *City of Escondido Climate Action Plan*.
<https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/ClimateActionPlan/AdoptedClimateActionPlan.pdf>.
- . 2013b. Greenhouse Gas Emissions: Adopted CEQA Thresholds and Screening Tables.
<https://www.escondido.org/Data/Sites/1/media/PDFs/Planning/ClimateActionPlan/CEQAThresholdsAndScreeningTables.pdf>.
- SANDAG (San Diego Association of Governments). 2015. *San Diego Forward: The Regional Plan*. October 2015. Accessed August 2017.
http://www.sdforward.com/pdfs/RP_final/The%20Plan%20-%20combined.pdf.
- Linscott Law & Greenspan. 2017. *Transportation Impact Analysis*. Appendix 2.12
- Michael Baker International. 2017. Greenhouse Gas Emissions Modeling Results (CalEEMod). Appendix 2.6

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