2.15 Global Climate Change

This section presents a brief summary of the current state of climate change science and greenhouse gas (GHG) emissions sources in California; a summary of applicable regulations; quantification of Project-generated GHG emissions and discussion about their potential contribution to global climate change; and analysis of the proposed Project's resiliency to climate change-related risks. In addition, mitigation measures are recommended to reduce the proposed Project's potential significant impacts. The section summarizes information from the *Greenhouse Gas Emissions Analysis* prepared by Ascent Environmental, Inc. for the proposed Project, included as Appendix F of this recirculated Supplemental Environmental Impact Report (SEIR).

2.15.1 Existing Conditions

The County of San Diego General Plan Update Program Environmental Impact Report (General Plan Update PEIR; County of San Diego 2011) included a discussion of existing conditions related to global climate change in Section 2.17.1 of the Global Climate Change section. The existing conditions described in the General Plan Update PEIR included an overview of GHGs and climate change and a summary of existing GHG emissions inventories for the United States, California and San Diego County. Updates to existing conditions that are relevant to the proposed Project are described below.

2.15.1.1 *GHG Emissions*

The California Air Resources Board (CARB) has prepared updated emissions inventories since certification of the General Plan Update PEIR. Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural emissions sectors (CARB 2014a). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (CARB 2014a). Emissions of carbon dioxide (CO_2) are byproducts of fossil fuel combustion. Methane (CH_4), a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. Nitrous oxide (N_2O) is also largely attributable to agricultural practices and soil management. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution (CO_2 dissolving into the water), respectively, two of the most common processes for removing CO_2 from the atmosphere.

The General Plan Update PEIR included a baseline emissions inventory for County government operations and its jurisdictional land use area (the unincorporated area) for 2006. An updated baseline emissions inventory was prepared for the Year 2013 for this recirculated SEIR in order to more accurately characterize existing conditions for the proposed Project and avoid interpolating changes in emissions from 2006 to 2013. The updated baseline inventory for

unincorporated San Diego County is shown in Table 2.15-1. Details on inventory data sources and methodology are provided in Appendix F.

TABLE 2.15-1. COMMUNITY-WIDE GREENHOUSE GAS EMISSIONS FOR UNINCORPORATED COUNTY - 2013

Emissions Sector	Metric tons carbon dioxide equivalent per year (MT CO_2e/yr)
Electricity	788,537
Natural Gas	662,112
Water (including Wastewater)	181,558
Solid Waste	106,987
Transportation	2,162,015
Off-Road	284,436
Agriculture	181,103
High GWP Gases	74,179
Total Emissions	**4,440,928**

Source: Greenhouse Gas Emissions Analysis (see Appendix C).
Notes: GWP = Global Warming Potential.
The High GWP Gases sector includes emissions from sulfuryl fluoride application for structural pest control.
Totals may not add up exactly due to rounding.

The County will be undertaking the preparation of a Climate Action Plan (CAP) in the future that will include an updated baseline emissions inventory and emissions forecasts. The baseline inventory reported in Table 2.15-1 is the most complete and current information available, so it provides a reasonable representation of existing emissions in the County for the purposes of this SEIR.

2.15.1.2 *Potential Effects of Global Climate Change*

The General Plan Update PEIR included a discussion of potential effects of climate change on unincorporated San Diego County. Additional projections data and resources are available since the certification of the General Plan Update PEIR that provide a better understanding of the anticipated effects of climate change, as described below.

The Intergovernmental Panel on Climate Change (IPCC) was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme to provide the world with a scientific view on climate change and its potential effects. According to the IPCC global average temperature is expected to increase relative to the 1986-2005 period by 0.3–4.8 degrees Celsius (°C) (0.5-8.6 degrees Fahrenheit [°F]) by the end of the 21st century (2081-2100), depending on future GHG emission scenarios (IPCC 2014:SPM-8). According to the California Natural Resources Agency (CNRA), temperatures in California are projected to increase 2.7°F above 2000 averages by 2050 and, depending on emission levels, 4.1–8.6°F by 2100 (CNRA 2012:2). Based on the trends in global GHG emission rates, the higher end of the projected temperature ranges are becoming more likely as the outcome.

Physical conditions beyond average temperatures could be indirectly affected by the accumulation of GHG emissions. For example, changes in weather patterns resulting from increases in global average temperature are expected to result in a decreased volume of precipitation falling as snow in California and an overall reduction in snowpack in the Sierra Nevada. Based upon historical data and modeling, the California Department of Water Resources (DWR) projects that the Sierra snowpack will experience a 25 to 40 percent reduction from its historic average by 2050 and 60 to 80 percent reduction by 2100 (DWR 2008:4). An increase in precipitation falling as rain rather than snow also could lead to increased potential for floods because water that would normally be held in the Sierra Nevada until spring could flow into the Central Valley concurrently with winter storm events (CNRA 2012:5). This scenario would place more pressure on California's levee/flood control system.

Another outcome of global climate change is sea level rise. Sea level rose approximately 7 inches during the last century and, assuming that sea-level changes along the California coast continue to track global trends, sea level along the state's coastline in 2050 could be 10-18 inches higher than in 2000, and 31 to 55 inches higher by the end of this century (CNRA 2012:9).

As the existing climate throughout California changes over time, the ranges of native plant and wildlife species could shift or be reduced, depending on the favored temperature and moisture regimes of each species. In the worst cases, some species would become extinct or be extirpated from the state if suitable conditions are no longer available (CNRA 2012:11 and 12).

Changes in precipitation patterns and increased temperatures are expected to alter the distribution and character of natural vegetation and associated moisture content of plants and soils. An increase in frequency of extreme heat events and drought are also expected. These changes are expected to lead to increased frequency and intensity of large wildfires (CNRA 2012:11).

Cal-Adapt is a climate change scenario planning tool developed by the California Energy Commission (CEC) that downscales global climate model data to local and regional resolution under two emissions scenarios; the A-2 scenario represents a business-as-usual future emissions scenario, and the B-1 scenario represents a lower GHG emissions future. According to Cal-Adapt, annual average temperatures in San Diego County are projected to rise by 3 to 6°F by 2100, with the range based on low and high emissions scenarios (Cal-Adapt 2015).

All references used in the General Plan Update PEIR (Chapter 6) were reviewed to ensure they are still valid today. With the exception of the baseline emissions inventory, all other existing conditions for global climate change within the Project area analyzed in this SEIR are the same as those described in the General Plan Update PEIR, and are hereby incorporated by reference.

2.15.2 Regulatory Framework

Section 2.1.7.2 of the General Plan Update PEIR describes the regulatory framework related to climate change and is hereby incorporated by reference. Updates to the regulatory framework

and additional relevant regulations that have been adopted since certification of the General Plan Update PEIR are summarized below.

2.15.2.1 *International and Federal*

Applicable international regulations discussed in the General Plan Update PEIR include the United Nations Framework Convention on Climate Change, IPCC, and the Kyoto Protocol. Applicable federal regulations discussed include U.S. Environmental Protection Agency (EPA) regulations, the federal Clean Air Act, and the Lieberman-Warner Climate Security Act. The Lieberman-Warner Climate Security Act was subsequently rejected by the U.S. Senate. Additional federal regulations that are relevant to the proposed Project are summarized below.

On August 28, 2014, EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) finalized a new national program that would reduce GHG emissions and improve fuel economy for all new cars and trucks sold in the U.S. (NHTSA 2012). EPA proposed the first-ever national GHG emissions standards under the Clean Air Act, and NHTSA proposed Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. This proposed national program allows automobile manufacturers to build a single light-duty national fleet that satisfies all requirements under both Federal programs and the standards of California and other states. While this program will increase fuel economy to the equivalent of 54.5 miles per gallon (mpg) for cars and light-duty trucks by Model Year 2025, additional phases are being developed by NHTSA and EPA that address GHG emission standards for new medium- and heavy-duty trucks (NHTSA 2014).

2.15.2.2 *State*

Applicable state regulations discussed in the General Plan Update PEIR include those of CARB; California Code of Regulations Title 24; California Assembly Bill (AB) 1493; AB 32, the California Global Warming Solutions Act of 2006 (California Health and Safety Code, Section 38500 et seq.); Senate Bill (SB) 97; SB 375; SB 1368; SB 1078; and additional California climate change initiatives. Additionally, although not considered regulation or law, the General Plan Update PEIR included discussions on Executive Orders S-3-05 and S-01-07. New and updated state policies, Executive Orders and regulations that are relevant to the proposed Project are summarized below.

Executive Order S-3-05

Executive Order S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the executive order established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Legislation was passed in 2006 (AB 32, the California Global Warming Solutions Act of 2006) to limit GHG emissions to 1990 levels by 2020 with continued "reductions in emissions" beyond 2020, but no specific additional reductions were enumerated in the legislation. Further, SB 375 (sustainable community strategies/transportation) established goals for emissions from light duty truck and automobiles for 2020 and 2035.

A recent California Appellate Court decision, *Cleveland National Forest Foundation v. San Diego Association of Governments* (November 24, 2014) 231 Cal.App.4th 1056, further examined the executive order and whether it should be viewed as having the equivalent force of a legislative mandate for specific emissions reductions. The case has been accepted for review by the California Supreme Court, and therefore is not legally binding precedent. Supreme Court Case No. S223603 (review granted March 11, 2015).

Executive Order B-30-15

On April 20, 2015 Governor Edmund G. Brown Jr. signed Executive Order B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The order also directs CARB to update their Scoping Plan to express the project level percentage reduction, in $MMTCO_2e$, necessary to meet the 2030 statewide reduction target. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union which adopted the same target in October 2014. California is on track to meet or exceed the current target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32). California's new emission reduction target of 40 percent below 1990 levels by 2030 supports the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050, the later was established under Executive Order S-3-05. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2 °C, the warming threshold at which there will likely be major climate disruptions such as super droughts and rising sea levels.

CARB Scoping Plan

In May 2014, CARB released and has since adopted the *First Update to the Climate Change Scoping Plan* to identify the next steps in reaching AB 32 goals and evaluate the progress that has been made between 2000 and 2012 (CARB 2014b:4 and 5). According to the update, California is on track to meet the near-term 2020 GHG limit and is well positioned to maintain and continue reductions beyond 2020 (CARB 2014b: ES-2). The update also reports the trends in GHG emissions from various emission sectors.

The update also elaborates on potential GHG reduction goals beyond 2020:

> California will develop a mid-term target to frame the next suite of emission reduction measures and ensure continued progress toward scientifically based targets. This target should be consistent with the level of reduction needed [by 2050] in the developed world to stabilize warming at 2°C (3.6°F) [above pre-industrial levels] and align with targets

> and commitments elsewhere. The European Union has adopted an emissions reduction target of 40 percent below 1990 levels by 2030. The United Kingdom has committed to reduce its emissions by 50 percent below 1990 levels within the 2022–2027 timeframe, and Germany has set its own 2030 emissions target of 55 percent below 1990 levels. The United States, in support of the Copenhagen Accord, pledged emission reductions of 42 percent below 2005 levels in 2030 (which, for California, translates to 35 percent below 1990 levels).
>
> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts [MW] of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80 percent below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions (CARB 2014b:34).
>
> As supported by many of California's climate scientists and economists, a key next step needed to build on California's framework for climate action is to establish a mid-term statewide emission reduction target. Cumulative emissions drive climate change, and a continuum of action is needed to reduce emissions not just to stated limits in 2020 or 2050, but also every year in between (CARB 2014b:ES6).

The update summarizes sector-specific actions needed to stay on the path toward the 2050 target. While the update acknowledges certain reduction targets by others (such as in the Copenhagen Accord), it stops short of recommending a specific target for California, instead acknowledging that mid-term targets need to be set "consistent with the level of reduction needed [by 2050] in the developed world to stabilize warming at 2°C (3.6°F) [above pre-industrial levels]."

Actions are recommended for the energy sector, transportation (clean cars, expanded zero-emission vehicle program, fuels policies, etc.), land use (compliance with regional sustainability planning targets), agriculture, water use (more stringent efficiency and conservation standards, runoff capture, etc.), waste (elimination of organic material disposal, expanded recycling, use of Cap and Trade program, etc.), green building (strengthen Green Building Standards), and other sectors. Many of the actions that result in meeting targets will need to be driven by new or modified regulations.

At the time of writing this SEIR, however, no specific reduction goal beyond 2020 has been recommended or formally adopted by CARB or the California State Legislature. As noted above, CARB is tasked with making a recommendation for targets beyond 2020 as part of the legislation.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017 through 2025. The new rules strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions than the statewide fleet in 2016 (CARB [no date]).

California Building Efficiency Standards of 2013 (Title 24, Part 6)

Buildings in California are required to comply with California's Energy Efficiency Standards for Residential and Nonresidential Buildings established by the CEC regarding energy conservation standards and found in Title 24, Part 6 of the California Code of Regulations. California's Energy Efficiency Standards for Residential and Nonresidential Buildings was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated on an approximately 3-year cycle to allow consideration and possible incorporation of new energy efficient technologies and methods. All buildings for which an application for a building permit is submitted on or after July 1, 2014 must follow the 2013 standards (CEC 2012). Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The CEC Impact Analysis for California's 2013 Building Energy Efficiency Standards estimates that the 2013 Standards are 23.3 percent more efficient than the previous 2008 standards for multi-family residential construction and 21.8 percent more efficient for non-residential construction (CEC 2013:3).

2.15.2.3 *Local*

Applicable local regulations discussed in the General Plan Update PEIR include those of the San Diego Air Pollution Control District.

The County developed and approved a Climate Action Plan (CAP) in June 2012 to address issues of growth and climate change. Specifically, the County CAP was designed to mitigate the impacts of climate change and achieve GHG reductions by implementing goals and strategies within the County, consistent with AB 32, Executive Order S-3-05, and to provide a mechanism

that subsequent projects within the County may use as a means to address GHG impacts under CEQA. The County CAP contained two emissions reduction targets: (1) a 15 percent reduction below 2005 levels by 2020; and (2) a 49 percent reduction below 2005 levels by 2035.

After the County CAP was adopted, a lawsuit was filed by Sierra Club. In April 2013, the San Diego County Superior Court set aside the approval of the County CAP. On October 29, 2014, Division One of the Fourth District Court of Appeal issued its decision in *Sierra Club v. County of San Diego*, Case No. D064243, 2014 WL 6657169. In its decision, the Fourth District held that the County CAP did not comply with the express language of Mitigation Measure CC-1.2 from the General Plan Update PEIR and; thus, violated CEQA. The Court found that the CAP did not contain enforceable GHG reduction measures that would achieve the specified emissions reductions. On March 11, 2015, the California Supreme Court denied the County's petition to review the Appellate Court decision in *Sierra Club v. County of San Diego*. Therefore, the County's CEQA process for the CAP was overturned and the CAP approval was vacated; it can no longer be relied upon as mitigation for the proposed Project's GHG impacts. In a stipulated order, the Superior Court directed the County to set aside the Board's June 12, 2012 action approving the CAP and the CEQA Addendum within 30 days of an adverse decision by the Supreme Court. The Supreme Court's March 11, 2015 denial of the petition for review constituted a final order. The County Board of Supervisors rescinded the CAP and related environmental findings on April 8, 2015, in compliance with the court order.

2.15.3 Analysis of Proposed Project Effects and Cumulative Impacts

GHG emissions have the potential to adversely affect the environment, because such emissions contribute, on a cumulative basis, to the significant cumulative impact of global climate change. Cumulative impacts are those that result from the combination of past, present, and reasonably foreseeable, probable future projects producing related effects. A project contributes to this potential cumulative impact through its incremental emissions combined with the cumulative increase from all other sources of GHGs. Thus, GHG impacts are recognized as exclusively cumulative impacts and there are no non-cumulative GHG emission impacts from a climate change perspective (CAPCOA 2008).

This approach is consistent with methods recommended by CNRA. The agency noted in its Public Notice for the proposed CEQA amendments that evidence indicates that in most cases, the impact of GHG emissions should be considered in the context of a cumulative impact, rather than a project-level impact (CNRA 2009a). Similarly, the *Final Statement of Reasons for Regulatory Action* for amendments to the CEQA Guidelines confirms that an EIR or other environmental document must analyze the incremental contribution of a project to GHG levels and determine whether those emissions are cumulatively considerable (CNRA 2009b).

Because the proposed Project is applying 2011 General Plan principles to assign land use designations for the Project areas throughout the unincorporated area, the cumulative study area for global climate change is the same as the General Plan Update PEIR. The PEIR climate

change analysis is incorporated by reference. In addition, Section 1.9 of this SEIR (Cumulative Project Assessment Overview) provides an update of new projects since adoption of the General Plan that are considered in the cumulative analysis.

2.15.3.1 *Compliance with California GHG Reduction Goals*

This section describes potential direct and cumulative impacts associated with Project compliance with AB 32, as it pertains to the Project areas addressed in this SEIR. In addition, because full buildout of the proposed Project is expected to occur well beyond the 2020 comparison year, this section also includes an analysis of potential GHG impacts in the timeframe beyond 2020. No statutory GHG emission reduction target has been enacted by the state for the period beyond 2020, although legislative proposals are in process during the 2015 session. California Governor Brown signed Executive Order B-30-15, which established his goal of a reduction target of 40 percent below 1990 levels by 2030 to reflect the need for continued pursuit of GHG reductions necessary to avoid the most environmentally damaging aspects of climate change.

Guidelines for the Determination of Significance

Establishment of a GHG significance threshold for a single project has been a challenge ever since this issue was first addressed in CEQA. A single land use development plan or project is not large enough to meaningfully affect climate change by itself (because climate change has resulted from many decades of cumulative global GHG emissions). In 2008, the Governor's Office of Planning and Research (OPR) issued guidance regarding this issue; that guidance stated that the adoption of appropriate significance thresholds was a matter of discretion for the lead agency. The guidance states (OPR 2008, pp 4-6):

> "[T]he global nature of climate change warrants investigation of a statewide threshold of significance for GHG emissions. To this end, OPR has asked [C]ARB technical staff to recommend a method for setting thresholds which will encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state. Until such time as state guidance is available on thresholds of significance for GHG emissions, we recommend the following approach to your CEQA analysis."
>
> Determine Significance
>
> - When assessing a project's GHG emissions, lead agencies must describe the existing environmental conditions or setting, without the project, which normally constitutes the baseline physical conditions for determining whether a project's impacts are significant.
> - As with any environmental impact, lead agencies must determine what constitutes a significant impact. In the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a "significant impact," individual

lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice.

- The potential effects of a project may be individually limited but cumulatively considerable. Lead agencies should not dismiss a proposed project's direct and/or indirect climate change impacts without careful consideration, supported by substantial evidence. Documentation of available information and analysis should be provided for any project that may significantly contribute new GHG emissions, either individually or cumulatively, directly or indirectly (e.g., transportation impacts).
- Although climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment. CEQA authorizes reliance on previously approved plans and mitigation programs that have adequately analyzed and mitigated GHG emissions to a less than significant level as a means to avoid or substantially reduce the cumulative impact of a project.

OPR recognized that, unless state requirements for significance criteria are established, selecting an appropriate threshold was within the discretion of the lead agency.

CEQA Guidelines Section 15064.4 was later added, in 2010, to address GHGs. The Guidelines state:

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

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

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

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

   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.

Thus, one threshold being used to analyze the proposed Project's GHG emissions is whether the proposed Project would conflict with or obstruct the goals or strategies of the California Global Warming Solutions Act of 2006 (AB 32) or its governing regulation (Health & Safety Code, §§ 38500-38599). The General Plan Update PEIR selected achievement of 1990 emission levels by 2020 as the GHG emissions significance threshold which is consistent with the goals and strategies of AB 32.

Because the proposed Project recommends land use designation changes on the Project areas that would accommodate future development, modifying land use designations in the 2011 General Plan, the same significance threshold framework is used for evaluating this proposed Project. In addition, because full buildout of the proposed Project is expected to occur well beyond the 2020 comparison year, this section also includes an analysis of potential GHG impacts in the timeframe beyond 2020.

The County has developed a *Recommended Approach to Addressing Climate Change in CEQA Documents* to be used during the County's review process for discretionary projects and environmental documents pursuant to CEQA (County of San Diego 2015). The guidance recommends using a 900 metric tons carbon dioxide equivalent per year (MT CO_2e/year) screening level to determine the need for additional analysis of GHG emissions from a project. Projects that exceed the screening level are required to demonstrate a 16 percent reduction from the "unmitigated" scenario. The 16 percent reduction requirement is equivalent to California's AB 32 goal of reducing 2020 emissions to 1990 levels. This is because the 2020 "business as usual" scenario (i.e., where no action to reduce GHG emissions is taken) scenario would need to be reduced by 15.75 percent to reach 1990 levels, according to analysis provided by CARB (CARB 2011).[1] Therefore, this significance threshold is consistent with the General Plan Update PEIR's threshold of achievement of 1990 emission levels by 2020.

As with the General Plan Update PEIR, the buildout scenario of the Project areas is based on the maximum development potential of the land use designations assigned to the Land Use Map. The San Diego Association of Governments (SANDAG) maintains a population model for the San Diego region, used for regional planning in conjunction with the Regional Comprehensive and Transportation Plans. Based on the assumptions used in the SANDAG forecast model, buildout of the General Plan (including the Project areas) is sufficient to meet SANDAG forecasts through the year 2050. Therefore, it is reasonable to conclude that buildout of the Project areas would extend well beyond 2020. While it is difficult to determine the exact buildout timeline of the Project areas with certainty, this analysis assumes that full buildout would occur by 2050. This is considered reasonably foreseeable because the proposed Project is part of SANDAG's regional projections for 2050. Consequently, this SEIR includes an analysis

[1] It should be noted that CARB made slight revisions to the 1990 and 2020 GHG inventories in the latest update to the Scoping Plan (May 2014). The revisions were based on updated global warming potentials. However, the resulting inventories differed by less than one percent from what was reported in the Functional Equivalent Document referenced here.

of potential GHG impacts in the timeframe beyond 2020 to address the statewide reduction targets established by Executive Order B-30-15 for 2030 (40% below 1990 emission levels) and Executive Order S-3-05 for 2050 (80% below 1990 emission levels).

Currently, state guidance regarding post-2020 GHG reduction consists of two Executive Orders that establish reduction goals for 2030 (40 percent below 1990 levels) and 2050 (80 percent below 1990 levels). Proposed legislation being considered by the California Legislature may define post-2020 statutory reduction targets.

Estimation of Greenhouse Gas Emissions

Long-term cumulative emissions for General Plan buildout, including FCI lands, were projected based on growth rates applied to the baseline inventory conducted for the General Plan Update PEIR. Long-term emissions for the proposed Project were extracted from the County-wide emissions forecasts for 2020, 2030 and 2050 based on the proportion of housing units and commercial acreage for the proposed Project with respect to overall growth anticipated under the County's General Plan.

GHG emissions from development associated with the proposed Project were estimated for the following sectors: transportation, building energy, solid waste, potable water and wastewater, and off-road vehicles.

Annual transportation emissions were estimated by multiplying vehicle emission factors (emissions per mile) to annual vehicle miles traveled (VMT) for the proposed Project. VMT for the proposed Project was estimated using the average daily trips (ADT) data reported in Section 2.13, Traffic. Emission factors from CARB's Emission Factor Model (EMFAC) 2014 were used to estimate emissions for the projected VMT. EMFAC2014 provides on-road emissions by vehicle type, fuel type, county, and calendar year and includes the impact of regulations and policies such as the Advanced Clean Cars program and the Low Carbon Fuel Standard.

Emissions from the energy sector were calculated by applying electricity and natural gas emission factors to the estimated total electricity and natural gas use for land uses anticipated under the proposed Project. Energy consumption rates for land uses anticipated under the proposed Project were projected based on the increase in development over the baseline inventory. Indirect emissions associated with electricity consumption were calculated based on utility emission factors for San Diego Gas and Electric (SDG&E) for CO_2, N_2O, and CH_4 reported in the Local Government Operations Protocol (CARB 2010: Table G.6) and adjusted for SDG&E's renewables portfolio. Natural gas emission factors were assumed to be constant regardless of calendar year and were available from the Climate Registry (The Climate Registry 2015:1, 28).

Potable water consumption and wastewater and solid waste generation for the proposed Project were projected based on the increase in development over the baseline inventory. Emissions associated with treating and supplying potable water for the proposed Project were estimated

based on energy intensity factors published by CEC (CEC 2006:40) and SDG&E's emission factors used for the energy sector. Wastewater emissions were calculated using Equation 6.3 in the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (IPCC 2006: 6.13). CH_4 emissions associated with solid waste disposal from the anticipated land uses were estimated based on the County's per-capita emissions rate from the baseline inventory.

GHG emissions associated with the operation of off-road equipment use associated with the proposed Project were obtained using a combination of CARB's OFFROAD2007 and OFFROAD2011 models. The 2011 version of the model is limited to construction, industrial, and oil drilling equipment types and does not include other equipment such as landscaping equipment or recreational off-road vehicles. In cases where the 2011 inventory model does not cover a desired category, CARB recommends using OFFROAD2007 as the appropriate tool for estimating emissions. Usage data for the proposed Project was estimated using growth rates in individual land uses from the baseline.

Additional details on GHG emissions estimation methodology are provided in Appendix C.

Impact Analysis

The General Plan Update PEIR evaluated impacts from the adoption of the General Plan county-wide, excluding FCI lands, and concluded that buildout of the General Plan would result in potentially significant direct and cumulative impacts related to compliance with AB 32. The discussion of impacts can be found in Chapter 2.17, Global Climate Change (County of San Diego 2011) and is incorporated by reference. The General Plan Update PEIR concluded that these impacts would be reduced to below a level of significance through the implementation of a combination of federal, state, and local regulations; existing County regulatory processes; the adopted General Plan goals and policies; and specific mitigation measures/implementation programs identified in the General Plan Update PEIR. One mitigation measure in the General Plan Update PEIR was the requirement to prepare a CAP that achieves identified reduction targets pursuant to AB 32 goals. As discussed in Section 2.15.2, because the County's CEQA process for the CAP was overturned in a court decision and the CAP approval was vacated by the Board of Supervisors; it can no longer be relied upon as mitigation for the proposed Project's GHG impacts.

The General Plan Update PEIR provided an analysis of potential future development of the County's unincorporated areas, with general development assumptions provided for the former FCI lands based on the anticipated build-out. However, the former FCI lands, as currently designated, were not included; therefore, potential impacts from development of these lands were not fully analyzed in the General Plan Update PEIR, as described below. Please refer to Chapter 1.0, Project Description, Location, and Environmental Setting, for a comparison of residential yield and commercial and industrial acreage between the General Plan Update PEIR and the proposed Project. The proposed Project would allow for an increase in the amount of

development on unincorporated lands over baseline conditions and the levels anticipated in the General Plan Update PEIR.

Emissions from future development consistent with the proposed Project would be higher than adopted or recommended GHG thresholds of significance across the state (e.g., 1,100 MT CO_2e/year for the Sacramento Metropolitan Air Quality Management District and the Bay Area Air Quality Management District; 1,150 MT CO_2e/year for the San Luis Obispo County Air Pollution Control District). It is not the intent of the County to adopt any of the above listed mass emissions limits as a numeric threshold for the proposed Project, rather this additional information is provided to put project-generated GHG emissions in the appropriate statewide context.

To establish additional context in which to consider the order of magnitude of proposed Project-generated GHG emissions, it should be noted that facilities (i.e., stationary, continuous sources of GHG emissions) that generate greater than 25,000 MT CO_2e/year are mandated to report their GHG emissions to CARB pursuant to AB 32. On a national (federal) level, the Council on Environmental Quality recommends 25,000 MT CO_2e/year as the level below which full analysis of GHG emissions is not required for projects subject to the National Environmental Policy Act. As shown in Table 2.15-2 and considering the contextual information provided above regarding the magnitude of GHG emissions, future development consistent with the proposed GPA would generate a substantial amount of emissions over baseline conditions.

TABLE 2.15-2 SUMMARY OF ANNUAL GREENHOUSE GAS EMISSIONS ASSOCIATED WITH POTENTIAL FUTURE DEVELOPMENT IN THE PROPOSED PROJECT AREAS IN 2020, 2030 AND 2050 (MT CO_2E/YEAR)

Emissions Activity	2020	2030	2050
Transportation	26,069	68,373	124,752
Electricity	7,161	11,221	21,669
Natural Gas	4,250	7,823	14,968
Water	1,135	1,470	2,512
Wastewater	661	1,129	2,063
Solid Waste	1,278	2,015	3,490
Off-road	2,232	3,832	7,030
Total Annual Emissions	**42,786**	**97,893**	**178,534**

Source: Modeling conducted by Ascent Environmental in 2015

Notes: MT CO_2e/year = metric tons carbon dioxide equivalent per year.

The proposed Project-generated emissions for 2020 shown in Table 2.15-2 represent the "unmitigated" scenario (project description including project design features, but not mitigation measures; all GHG reductions directly attained in compliance with applicable standards and regulations developed under the mandate of AB 32). These emissions estimates include the influence of Pavley I clean car standard and the 20-percent Renewable Portfolio Standard

because these programs are already included in the calculations that support the 16 percent mitigation requirement (County of San Diego 2015). Compliance with General Plan policies and General Plan Update PEIR mitigation measures alone will not reduce the proposed Project's emissions by 16 percent. Even assuming compliance with additional state regulations, such as the Low Carbon Fuel Standard, Advanced Clean Cars regulation, and 33-percent Renewables Portfolio Standard, these measures would not reduce the proposed Project's emissions by more than 16 percent compared to the unmitigated scenario, consistent with the AB 32 goal, as shown in Table 2.15-3 below.

TABLE 2.15-3 SUMMARY OF ANNUAL GREENHOUSE GAS EMISSIONS ASSOCIATED WITH UNMITIGATED AND MITIGATED PROJECT SCENARIOS IN 2020

Emissions Activity	Unmitigated Project (MT CO_2e/yr)	Mitigated Project (MT CO_2e/yr)
Transportation	26,069	23,257
Electricity	7,161	5,797
Natural Gas	4,250	3,991
Water	1,135	951
Wastewater	661	661
Solid Waste	1,278	1,278
Off-road (Including Construction Equipment)	2,232	2,232
Total Annual Emissions	**42,786**	**38,167**
Reduction from Unmitigated Scenario		**10.80%**

Source: Modeling conducted by Ascent Environmental in 2015

Notes:

MT CO_2e/yr = metric tons of carbon dioxide equivalent per year.

Unmitigated scenario includes the impact of Pavley I clean car standards and 20 percent Renewable Portfolio Standard.

Mitigated scenario includes the impact of the Low Carbon Fuel Standard, Advanced Clean Cars regulation and 33 percent Renewable Portfolio Standard. These measures are described in Section 2.15.4.1 below.

As described in Section 2.15.2, CARB is working toward recommending goals that extend beyond 2020 and, further, Executive Orders B-30-15 and S-3-05 set targets of reducing emissions to 40 and 80 percent below 1990 levels by 2030 and 2050, respectively. New legislation is proposed to establish post-2020 goals, but no action on the legislation has been taken as of September 2015. While General Plan policy implementation would contribute to reducing potential GHG emissions from the proposed Project, achievement of future GHG efficiency standards is largely dependent on regulatory controls applied to all sectors of the California economy. As stated above in the summary of the updated Scoping Plan and repeated here:

> California will develop a mid-term target to frame the next suite of emission reduction measures and ensure continued progress toward scientifically based targets. This target should be consistent with the level of reduction needed [by 2050] in the developed world to stabilize warming at 2°C (3.6°F) [above pre-industrial levels] and align with targets

> and commitments elsewhere. The European Union has adopted an emissions reduction target of 40 percent below 1990 levels by 2030. The United Kingdom has committed to reduce its emissions by 50 percent below 1990 levels within the 2022–2027 timeframe, and Germany has set its own 2030 emissions target of 55 percent below 1990 levels. The United States, in support of the Copenhagen Accord, pledged emission reductions of 42 percent below 2005 levels in 2030 (which, for California, translates to 35 percent below 1990 levels).
>
> This level of reduction is achievable in California. **In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts [MW] of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80 percent below 1990 levels by 2050**. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions (CARB 2014b:34, **emphasis added**).

Thus, the ability of this proposed Project—and all land use development—to achieve any goals beyond 2020 is partially out of the control of the Project and the County at the individual project level. Specific project-level reduction target has not been adopted by the State Legislature. The County recognizes the importance of Executive Order Goals of 40 and 80 percent below 1990 GHG levels by 2030 and 2050, respectively and the analysis herein is intended to take these goals into account in determining the significance of potential impacts.

Potential future development consistent with the proposed Project would result in substantial levels of incremental GHG emissions in 2020, 2030 and 2050 as shown in Table 2.15-2. Emissions reported in the table were estimated based on the overall proportion of housing units and commercial acreage that would be developed under the proposed Project in comparison to the overall General Plan at buildout. This proportion was then applied to County-wide GHG emissions in 2020, 2030 and 2050 to estimate Project-related emissions. The incremental increase in emissions for 2020 and 2030 presents one possible trajectory of GHG emissions for the proposed Project. It is difficult to determine the pace of development on the Project areas with certainty. This analysis is based on the assumption that full buildout of the Project would occur by 2050. This is considered reasonably foreseeable because the proposed development is part of SANDAG's regional projections for 2050. Actual emissions would differ based on development that occurs by the various horizon years.

Potential future development consistent with the proposed Project would not meet the state-adopted target embodied in AB 32 for 2020. Implementation of General Plan policies and mitigation measures from the General Plan Update PEIR would reduce the Project's GHG emissions beyond 2020, but not below a level of significance. The effectiveness of these policies and measures cannot be predicted at the Project-level, in large part because several measures are

not mandatory. Other measures involve coordination with local agencies that may yield a regional benefit but may be difficult to translate into Project-level reductions.

Potential future development consistent with the proposed Project would not meet the GHG standard necessary to comply with the 2020 statewide GHG emissions target. Further, it is likely that the Project would not feasibly attain future GHG reduction targets, because of the potential magnitude of future emission reductions needed to avoid the most severe climate impacts (for instance, to reach 40 percent below 1990 emissions target by 2030, consistent with EO B-30-15, or 80 percent below 1990 emissions target by 2050, consistent with EO S-3-05). Attainment would be at least partially reliant on potential new state regulations, such as requirements for more electric vehicles in the fleet mix, more stringent energy efficiency standards for buildings, and additional generation of renewable electricity. Therefore, the ability of the proposed Project to meet GHG reduction targets beyond 2020 is uncertain. Because development consistent with the land use designations adopted for the Project would generate substantial GHG emissions, regardless of the alternative land use map ultimately approved by the County, and because it currently cannot be known if the Project would comply with GHG targets after 2020 in the range of an additional 40 to 80 percent reduction, the potential exists that post-2020 emissions may contribute considerably to cumulative carbon emissions that promote further climate change; therefore, this impact would be potentially significant.

The regulations, implementation programs (General Plan goals/policies) described in this impact analysis, and mitigation measures from the General Plan Update PEIR are presented in Section 2.15.4 (Mitigation) of this SEIR. Implementation of regulations, General Plan implementation programs, and General Plan Update PEIR mitigation measures would reduce the Project's GHG emissions. However, important factors are not currently known, such as: GHG emission reduction target in effect at the time that subdivision maps are submitted for approval; the effectiveness of regulatory actions already adopted as part of the implementation of the Global Warming Solutions Act of 2006; and the potential for new regulations and their effectiveness related to statutes enacting GHG reduction targets (similar to the current goals in adopted state Executive Orders). Further, the cost and feasibility of mitigation actions needed to comply with future policies are not known. Therefore, feasible mitigation of potentially significant GHG impacts from development consistent with the proposed Project in the Project areas cannot be assured at this time for GHG target levels. For this reason, and because future development consistent with the proposed Project would emit a substantial level of GHG that may contribute considerably to cumulative climate change impacts, the appropriate conclusion to disclose for purposes of CEQA compliance regarding residual, post-mitigation GHG emission impact is potentially significant and unavoidable.

2.15.3.2 *Potential Effects of Global Climate Change on the Proposed Project*

This section describes potential direct and cumulative impacts associated with the effects of global climate change on the proposed Project as it pertains to potential future development within the Project areas addressed in this SEIR.

Guidelines for the Determination of Significance

CEQA gives a lead agency the discretion to determine the significance of environmental impacts identified in its CEQA documents. For purposes of evaluating the proposed Project, global climate change would have a significant effect if it would subject development of land uses associated with the proposed Project to substantial climate-related risks.

Impact Analysis

The General Plan Update PEIR evaluated impacts from the adoption of the General Plan county-wide, excluding FCI lands, and concluded that buildout of the General Plan would result in potentially significant direct and cumulative impacts related to potential effects of global climate change. The discussion of impacts can be found in Chapter 2.17, Global Climate Change (County of San Diego 2011) and is incorporated by reference. The General Plan Update PEIR concluded that these impacts would be reduced to below a level of significance through the implementation of a combination of federal, state, and local regulations; existing County regulatory processes; the adopted General Plan goals and policies; and specific mitigation measures/implementation programs identified in the General Plan Update PEIR.

As discussed previously in this chapter, there is substantial evidence that human-induced increases in GHG concentrations in the atmosphere have led to increased global average temperatures (climate change) through the intensification of the greenhouse effect, and associated changes in local, regional, and global average climatic conditions. Annual average temperatures in San Diego County are projected to rise by 3-6°F by 2100, with the range based on low and high emissions scenarios. Although there is a strong scientific consensus that global climate change is occurring and is influenced by human activity, there is less certainty as to the timing, severity, and potential consequences of the climate phenomena, particularly at specific locations. Scientists have identified several ways in which global climate change could alter the physical environment in California (CNRA 2012, DWR 2006, IPCC 2014). These include:

- increased average temperatures;
- modifications to the timing, amount, and form (rain vs. snow) of precipitation;
- changes in the timing and amount of runoff;
- reduced water supply;
- deterioration of water quality; and

- elevated sea level.

Many of these changes may translate into a variety of issues and concerns that may affect the Project areas, including but not limited to, decreases in available water supply, increased frequency of wildfires, increased demand for energy as a result of the greater need for summer cooling, and impacts to public health related to increased heat, air pollution, wildfires, and infectious diseases.

Water demand in the County would increase due to additional development on Project areas under the proposed Project. At the same time, climate change could further reduce the Colorado River flows (an important source of imported water for the County) by 20 percent or more. A decline in the Sierra Nevada snowpack, aggravated by increased temperatures, could reduce water availability from Northern California rivers, which also serve as primary sources of imported water for the County, through the California Aqueduct. As discussed in Section 2.14.3.4, Adequate Water Supplies in the Utilities chapter of this SEIR, due to uncertainties surrounding the implementation of future water supply projects, water supplies may be inadequate to serve the build out of the proposed Project. Additional reductions in water supply as a result of climate change would further impact the availability of water to support future development under the proposed Project.

Future development under the proposed Project would occur in areas that are known to be at high risk for wildland fires, including in High or Very High Fire Hazard Severity Zones and Wildland/Urban Interface Areas, thereby resulting in increased fire related risk to people and structures. Approximately 65,762 acres of land within the Project area are designated as Very High Fire Hazard Severity Zones and approximately 4,620 acres are designated as High Fire Hazard Severity Zones. The proposed Project would designate 86 percent of the land classified as Very High Fire Hazard Severity as Rural Lands. Additionally, approximately 47,737 acres of land within the Project area are designated as Wildland Urban Interface Areas. Climate change impacts are expected to increase the frequency and severity of wildland fires in San Diego County and elsewhere in the state. As discussed in Section 2.6.3.7, Wildland Fires in the Hazards chapter of this SEIR, implementation of a combination of federal, state and local regulations; existing County regulatory processes; the adopted 2011 General Plan goals and policies; and specific mitigation measures/implementation programs identified in the General Plan Update PEIR would reduce impacts associated with wildfires, but not to a level below significance. Planned future development in the Project areas would occur in areas that are at high risk for wildland fires. Section 2.6.4.7 lists the General Plan policies and mitigation measures that would reduce impacts related to wildland fire hazards.

The proposed Project consists of changes to the land use designations over 71,700 acres of land which support special status plant and wildlife species. Similar to the 2011 General Plan, the project would directly or indirectly reduce and fragment habitats of candidate, sensitive, or special status species. As discussed in Section 2.4.3.1, Special Status Plant and Wildlife Species of the Biological Resources chapter, the proposed Project's direct, indirect and cumulative

impacts would be reduced by the same regulations, implementation programs (2011 General Plan goals/policies) and mitigation measures from the General Plan Update PEIR and repeated in Section 2.4.4.1. However, implementation of the mitigation measures listed in Section 2.4.4.1 would not reduce these impacts to below a level of significance.

Direct and cumulative impacts similar in nature to those identified in the General Plan Update PEIR related to potential effects of global climate change would occur with the proposed Project. However, the Project areas provide a greater number of natural, physical, and environmental constraints than urbanized areas in the County, a higher occurrence of sensitive plant or animal species, and limitations in adequate provision of infrastructure and utilities or public services (e.g., fire protection, law enforcement). Within the Project areas, the majority of land is undeveloped or consists of dispersed, rural residential development. Potentially significant direct and cumulative impacts regarding climate change risks may occur for development consistent with the proposed Project. Some of these impacts, such as water supply constraints, wildland fire risks, and ecosystem degradation, are expected to be more severe for the Project areas, compared to other unincorporated land planned for development in the General Plan, because the proposed development would be in areas that are generally more remote and contain more sensitive natural resources than other areas of planned development closer to urban communities in the County. Other impacts, such as public health and energy needs, would be similar to those identified in the General Plan Update PEIR, because these impacts are not as heavily influenced by specific location.

Direct and cumulative impacts would be reduced by the regulations, implementation programs (General Plan goals/policies) and mitigation measures from the General Plan Update PEIR, which are repeated in Section 2.15.4 (Mitigation) of this SEIR. These include the Clean Air Act, CARB standards, Title 24 standards, Executive Orders S-3-05, S-01-07 and B-30-15, AB 32, SB 97, SB 1368, SB 1078, San Diego Air Pollution Control District standards, and other existing County programs and policies. These state policies, as well as the County's policies and mitigation measures proposed with the General Plan, enable the proposed Project and County entities that serve the proposed Project to readily respond to adverse consequences from global climate change. However, because of the substantial number of natural, physical, and environmental constraints and sensitivity of natural resources associated with the Project areas these impacts would not be feasibly mitigated to below a level of significance; therefore, this impact would be significant and unavoidable.

2.15.4 Mitigation

2.15.4.1 *Compliance with California GHG Reduction Goals*

Direct and cumulative impacts associated with Project would be reduced with implementation of the following applicable General Plan policies and mitigation measures identified in the General Plan Update PEIR and repeated below. <u>The applicable mitigation measure that would implement the policy is shown in brackets at the end of each policy.</u>

General Plan Policies

Policy COS-10.7: Recycling of Debris. Encourage the installation and operation of construction and demolition (C&D) debris recycling facilities as an accessory use at permitted (or otherwise authorized) mining facilities to increase the supply of available mineral resources. [CC-1.19]

Policy COS-15.1: Design and Construction of New Buildings. Require that new buildings be designed and constructed in accordance with "green building" programs that incorporate techniques and materials that maximize energy efficiency, incorporate the use of sustainable resources and recycled materials, and reduce emissions of GHGs and toxic air contaminants. [CC-1.1]

Policy COS-15.2: Upgrade of Existing Buildings. Promote and, as appropriate, develop standards for the retrofit of existing buildings to incorporate architectural features, heating and cooling, water, energy, and other design elements that improve their environmental sustainability and reduce GHG. [CC-1.9]

Policy COS-15.3: Green Building Programs. Require all new County facilities and the renovation and expansion of existing County buildings to meet identified "green building" programs that demonstrate energy efficiency, energy conservation, and renewable technologies. [CC-1.1, CC-1.16, CC-1.18]

Policy COS-17.1: Reduction of Solid Waste Materials. Reduce greenhouse gas emissions and future landfill capacity needs through reduction, reuse, or recycling of all types of solid waste that is generated. Divert solid waste from landfills in compliance with State law. [CC-1.6, CC-1.17]

Policy COS-17.5: Methane Recapture. Promote efficient methods for methane recapture in landfills and the use of composting facilities and anaerobic digesters and other sustainable strategies to reduce the release of GHG emissions from waste disposal or management sites and to generate additional energy such as electricity. [USS-6-7 in GPU FEIR]

Policy COS-18.2: Energy Generation from Waste. Encourage use of methane sequestration and other sustainable strategies to produce energy and/or reduce GHG emissions from waste disposal or management sites. [CC-1.9]

Policy COS-20.2: GHG Monitoring and Implementation. Establish and maintain a program to monitor GHG emissions attributable to development, transportation, infrastructure, and municipal operations and periodically review the effectiveness of and revise existing programs as necessary to achieve GHG emission reduction objectives. [CC-1.3]

Policy COS-20.4: Public Education. Continue to provide materials and programs that educate and provide technical assistance to the public, development professionals, schools, and other parties regarding the importance and approaches for sustainable development and reduction of GHG emissions. [CC-1.14]

These polices will maximize energy efficiency, incorporate the use of sustainable resources and recycled materials, and reduce emissions of GHGs. Adherence to these policies will reduce impacts associated with GHG emissions.

Mitigation Measures

CC-1.1 Update the County Green Building Program to increase effectiveness of encouraging incentives for development that is energy efficient and conserves resources through incentives and education.

CC-1.3 Work with SANDAG to achieve regional goals in reducing GHG emissions associated with land use and transportation.

CC-1.4 Review traffic operations to implement measures that improve flow and reduce idling such as improving traffic signal synchronization and decreasing stop rate and time.

CC-1.5 Coordinate with the San Diego County Water Authority and other water agencies to better link land use planning with water supply planning with specific regard to potential impacts from climate change and continued implementation and enhancement of water conservation programs to reduce demand. Also support water conservation pricing (e.g., tiered rate structures) to encourage efficient water use.

CC-1.6 Implement and expand county-wide recycling and composting programs for residents and businesses. Require commercial and industrial recycling.

CC-1.7 Incorporate the California ARB's recommendations for a climate change CEQA threshold into the County Guidelines for Determining Significance for Climate Change. These recommendations will include energy, waste, water, and transportation performance measures for new discretionary projects in order to reduce GHG emissions. Should the recommendation not be released in a timely manner, the County will prepare its own threshold.

CC-1.8 Revise County Guidelines for Determining Significance based on the Climate Change Action Plan. The revisions will include guidance for proposed discretionary projects to achieve greater energy, water, waste, and transportation efficiency.

CC-1.9 Coordinate with APCD, SDG&E, and the California Center for Sustainable Energy to research and possibly develop a mitigation credit program. Under this program, mitigation funds will be used to retrofit existing buildings for energy efficiency to reduce GHG emissions.

CC-1.10 Continue to implement the County Groundwater Ordinance, Watershed Protection Ordinance (WPO), Resource Protection Ordinance (RPO), MSCP and prepare MSCP Plans for North and East County in order to further preserve wildlife habitat and corridors, wetlands, watersheds, groundwater recharge areas and other

open space that provide carbon sequestration benefits and to restrict the use of water for cleaning outdoor surfaces and vehicles. The WPO also implements low-impact development practices that maintain the existing hydrologic character of the site to manage storm water and protect the environment. (Retaining storm water runoff on-site can drastically reduce the need for energy-intensive imported water at the site.)

CC-1.11 Revise the Ordinance Relating to Water Conservation for Landscaping to further water conservation to:

- Create water-efficient landscapes and use water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls.
- Use reclaimed water for landscape irrigation.
- Restrict watering methods (e.g., prohibit systems that apply water to non-vegetated surfaces) and control runoff.
- Provide education about water conservation and available programs and incentives.

CC-1.12 Continue to coordinate with resource agencies, CALFIRE, and fire districts to minimize potential wildfire risks in the County and to plan for the potential increase in future risk that may result from Climate Change.

CC-1.13 Continue to implement and revise as necessary the Regional Trails Plan as well as the Community Trails Master Plan to connect parks and publicly accessible open space through shared pedestrian/bike paths and trails to encourage walking and bicycling.

CC-1.14 Provide public education and information about options for reducing greenhouse gas emissions. In addition to addressing land development, education should also address purchasing, conservation, and recycling.

CC-1.15 Reduce VMT and encourage alternative modes of transportation by implementing the following measures:

- During Community Plan updates, establish policies and design guidelines that: encourage commercial centers in compact walkable configurations and discourage “strip” commercial development.
- Expand community bicycle infrastructure.
- Revise the Off-Street Parking Design Manual to include parking placement concepts that encourage pedestrian activity and concepts for providing shared parking facilities.
- Establish comprehensive planning principles for transit nodes such as the Sprinter Station located in North County Metro.
- Continue to locate County facilities near transit facilities whenever feasible.

- Coordinate with SANDAG, Caltrans, and tribal governments to maximize opportunities to locate park and ride facilities.
- Continue to coordinate with SANDAG, Caltrans, and transit agencies to expand the mass transit opportunities in the unincorporated county and to review the location and design of transit stops. Establish a DPLU transit coordinator to ensure land use issues are being addressed.
- Update the Zoning Ordinance to require commercial, office, and industrial development to provide preferred parking for carpools, vanpools, electric vehicles, and flex cars.

CC-1.16 Develop and implement a Strategic Energy Plan to increase energy efficiency in existing County buildings and set standards for any new County facilities that will ultimately reduce GHG emissions. This will include implementation of the following measures as will be detailed within the Plan:

- Improve energy efficiency within existing operations through retrofit projects, updated purchasing policies, updated maintenance/operations standards, and education.
- Improve energy efficiency of new construction and major renovations by applying design criteria and participating in incentive programs.
- Provide energy in a reliable and cost-effective manner and utilize renewable energy systems where feasible.
- Monitor and reduce energy demand through metering, building controls, and energy monitoring systems.
- Increase County fleet fuel efficiency by acquiring more hybrid vehicles, using alternative fuels, and by maintaining performance standards for all fleet vehicles.

CC-1.17 Develop and implement a County Operations Recycling Program. This will include implementation of the following measures as will be detailed within the Program:

- Reuse and recycle construction and demolition waste (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).
- Provide interior and exterior storage areas for recyclables and green waste and adequate recycling containers located in public areas.
- Recover by-product methane to generate electricity.
- Provide education and publicity about reducing waste and available recycling services.

CC-1.18 Develop and implement a County Operations Water Conservation Program.

CC-1.19 Revise the Zoning Ordinance to facilitate recycling salvaged concrete, asphalt, and rock.

CC-1.1 will help the County achieve AB 32 goals. CC-1.3 requires working with SANDAG as it incorporates sustainable communities strategies in its 2050 Regional Transportation Plan, to achieve measurable GHG reductions consistent with AB 32 strategies. CC-1.4 can substantially reduce GHG emissions generated by vehicles on County roads. CC-1.5 is the coordination with the San Diego County Water Authority and other water agencies to achieve efficient water usage, which in turn results in energy savings which has a direct reduction in GHG emissions. CC-1.6 will divert solid waste from landfills in the region and potential GHG produced from landfills. Furthermore, recycling material consumes less energy than does the production of raw materials, further contributing to GHG reductions in accordance with AB 32. CC-1.7 will ensure that future development under the General Plan incorporate design features and mitigation measures that minimize or reduce GHG emissions and support achievement of AB 32 goals. CC-1.8 will warrant future development under the General Plan is consistent with the Climate Change Action Plan which identifies the County's GHG reduction strategies for achieving AB 32 goals. CC-1.9 will be used to retrofit existing buildings for energy efficiency and to reduce GHG emissions. CC-1.10 will serve to minimize development footprint and maximize natural resource preservation, thereby resulting in less GHG emissions and better capture/storage of carbon.

CC-1.11 will result in direct energy and GHG reductions in accordance with AB 32 strategies. CC-1.12 ensures that the County will continue efforts to prevent wildfires both for human safety and for the health of the environment. CC-1.13 expands opportunities for alternative transportation; therefore, the County can reduce GHG emissions associated with VMT. CC-1.14 requires public awareness and education, so more people can be made aware of how GHG emissions are created at home. With this knowledge, much can be done to reduce day to day emissions which will help in the County's goal to achieve AB 32 targets. CC-1.15 will reduce daily VMT and thus, will reduce GHG emissions in accordance with AB 32 strategies. CC-1.16 will implement a Strategic Energy Plan, which will improve the County's overall GHG reduction and help to achieve AB 32 targets. CC-1.17 requires construction and demolition waste to be alternatively disposed of further reduces waste put in the landfills, which reduces the production of methane. In addition, recycling efforts reduce the quantity of energy necessary to produce goods from a raw state. CC-1.18 is the preparation and implementation of a County Operations Water Conservation Program. Reductions in water usage result in direct reductions of GHG. CC-1.19 requires the County to make revisions to the Zoning Ordinance to facilitate recycling salvaged concrete, asphalt, and rock. Such recycling efforts reduce GHG emissions and help ensure that AB 32 goals are met. <u>CC-20 requires the County to continue to maintain and monitor inactive solid waste disposal sites to ensure compliance with environmental regulations to minimize GHG emissions. CC-21 requires the County to streamline regulations that encourage the use of alternative energy systems, such as photovoltaics and wind.</u>

These County policies and mitigation measures of the General Plan enable the proposed Project and County entities that serve the proposed Project to readily respond to adverse consequences from global climate change. However, because of the substantial number of natural, physical, and environmental constraints and sensitivity of natural resources associated with the Project areas these impacts would not be feasibly mitigated to below a level of significance; therefore, this impact would be significant and unavoidable.

The County considered the following additional project-level mitigation:

- Require both discretionary and ministerial projects, within the FCI Project areas, to exceed 2013 Title 24 building standards and other GHG emission reduction design features to meet quantitative reduction targets consistent with California GHG reduction goals.

As explained below, this measure has been deemed infeasible due to its social and economically inequitable implementation, and because it conflicts with the project objective to minimize public costs and infrastructure:

- Current land use designations for the FCI lands (the No Project alternative) are projected to result in 15,094 dwelling units. The proposed Project land use designations are projected to result in 6,245 dwelling units. The reduction in dwelling units (8,849 fewer dwelling units at buildout of the land use maps) that result from the proposed Project General Plan Amendment is unique in this regard because most GPAs seek to increase development potential.
- As shown in Table 2.15-4 below, the proposed Project suggests a more intensive land use designation for only 207 of the 4,083 parcels included within the Project areas compared to current designations. There is no change in land use designation for 2,496 parcels and a reduction in land use intensity for the remaining 1,380 parcels. Therefore, the proposed Project either does not change or would reduce the land use intensity for 95% of parcels (95.9% of the Project area acreage) within the Project area. That is, without any additional development potential, projects would be required to implement costly building and design standards that exceed current state recommendations and requirements, and the effectiveness of which to further reduce greenhouse gas emissions has not been conclusively determined, without realizing increased development. In fact, over one-third of the parcels within the Project areas would lose development potential due to the amended (less intense) land use designations of the proposed Project. The overall reduction in residential development potential of the proposed Project will result in reduced GHG emissions compared to current land use designations, regardless of imposed mitigation.

TABLE 2.15-4. COMPARISON OF INTENSITY OF LAND USE DESIGNATIONS PROPOSED PROJECT TO NO PROJECT ALTERNATIVES

Dwelling Units (DUs) at Buildout: *Existing General Plan compared to Proposed Project*	# Parcels	% Total (Parcels)	Acres	% Total (Acreage)
Proposed Project allows more DUs	207	5.1%	2,950	4.1%
Same number of DUs at buildout	2,496	61.1%	9,688	13.5%
Proposed Project allows less DUs	1,380	33.8%	59,077	82.4%
TOTAL	**4,083**	**100.0%**	**71,715**	**100.0%**

Source: County Planning & Development Services

The annual 900 metric ton carbon dioxide equivalent (MT CO2e) screening level referenced in the CAPCOA white paper (http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf) is being used by the County as a conservative criterion for determining the size of projects that would require further analysis and development of project-specific mitigation with regard to climate change. The CAPCOA white paper reports that the 900 metric ton screening level would capture more than 90% of development projects, allowing for mitigation towards achieving the State's GHG reduction goals. Table 2.15-5 shows the sizes of projects that would generally require a climate change analysis and mitigation.

TABLE 2.15-5. PROJECT SIZES THAT WOULD TYPICALLY REQUIRE A CLIMATE CHANGE ANALYSIS(1)

Project Type(2)	Project Size Equivalency
Single Family Residential	≥50 units
Apartments/Condominiums	≥70 units
General Commercial Office Space	≥35,000 square feet
Retail Space	≥11,000 square feet
Supermarket/Grocery Space	≥6,300 square feet

1) A determination on the need for a climate change analysis for project types not included in the table will be made on a case-by-case basis considering the 900 metric ton criterion.
2) A project with a combination of types may demonstrate compliance with the screening threshold through addition of the ratios of each contribution by the associated equivalency threshold.

As can be seen in Table 2.15-5 above, only residential projects resulting in over 50 residential dwelling units (barring unique circumstances) are required to conduct a climate change analysis thereby quantifying project emissions and determining impact significance for the target emission horizon years of 2020, 2030 and 2050.

Table 2.15-6 shows the number of parcels and acreage that would be required to prepare a climate change analysis based on the proposed Project land use designations in accordance with the criteria established by Table 2.15-5.

As shown in Table 2.15-6, only five parcels (132 acres), or 1.0% of the total number of parcels is proposed for a land use intensity that would allow subdivision into 50 or more lots. Three of those five parcels would allow 70 dwelling units or more, which would require a climate change analysis for projects constructing apartments or condominiums.

Office, retail, and supermarket/grocery spaces would be allowed only in parcels with a Rural Commercial designation. The criteria for commercial spaces in Table 2.15-5 are based on square feet rather than acres. Specific Floor Area Ratios (FAR) are used to convert the acreage of each parcel into the applicable square footage. Based on the criteria that County uses to require a climate change analysis for commercial uses, 6,300 SF (supermarket/grocery space) is the smallest structure that triggers the need for a climate change analysis. As shown in Table 2.15-6, 29 parcels would allow supermarket/grocery spaces of 6,300 square feet or larger—17 parcels in areas where imported water infrastructure is either available or planned and 12 parcels in areas where imported water is not currently available, or planned to be available. This equates to 0.7 percent of total parcels.

The remaining 4,061 parcels (if imported water is required) or 4049 parcels (if imported water is not required) do not possess the development potential that would trigger the 900 metric ton screening level.

TABLE 2.15-6. PARCELS THAT WOULD ALLOW PROJECT SIZES THAT WOULD REQUIRE A CLIMATE CHANGE ANALYSIS PER TABLE 2.15-5 CRITERIA[(1)]

Development Process	# Parcels	% Total (Parcels)	Acres	% Total (Acreage)
Single Family Residential				
Climate Change Analysis (TM > 50 lots)	5	0.1%	132	0.2%
No Climate Change Analysis (TM < 50 lots)	4,078	99.9%	71,583	99.8%
Apartments / Condominiums				
Climate Change Analysis (TM > 70 units)	3	0.1%	115	0.2%
No Climate Change Analysis (TM < 70 units)	4,080	99.9%	71,600	99.8%
General Commercial Office Space[(2)]				
Climate Change Analysis (≥ 35,000 SF)				
Imported water (available/planned)	15	0.4%	142	0.2%
No Imported water is available	6	0.1%	30	0.0%
No Climate Change Analysis (< 35,000 SF)	4,062	99.5%	71,543	99.8%
Retail Space[(1)]				
Climate Change Analysis (≥ 11,000 SF)				
Imported water (available/planned)	17	0.4%	146	0.2%
No Imported water is available	11	0.3%	39	0.1%
No Climate Change Analysis (< 11,000 SF)	4,055	99.3%	71,530	99.7%
Supermarket / Grocery Space[(3)]				
Climate Change Analysis (≥ 6,300 SF)				
Imported water (available/planned)	17	0.4%	146	0.2%

Development Process	# Parcels	% Total (Parcels)	Acres	% Total (Acreage)
No Imported water is available	12	0.3%	39	0.1%
No Climate Change Analysis (< 6,300 SF)	4,054	99.3%	71,530	99.7%

Source: County Planning & Development Services
Notes:
1) Based on proposed Project land use designations
2) Assumes a 0.35 Floor Area Ratio (FAR)
3) Assumes a 0.25 FAR

Mitigation requiring project-specific reduction percentages for projects identified using the CAPCOA white paper criteria is infeasible for the following reasons:

- Requiring project-specific reductions would add development costs and requirements, which could potentially make development, although allowed by the Land Use Map, infeasible. This would not be consistent with General Plan Land Use Policy LU-1.9, Achievement of Planned Densities. For example, reductions in land use intensity are frequently advocated to reduce emissions or vehicle miles, and such reductions would impact the feasibility of development, which would be inconsistent with Policy LU-1.9.

  > ***LU-1.9 Achievement of Planned Densities***. *Recognizing that the General Plan was created with the concept that subdivisions will be able to achieve densities shown on the Land Use Map, planned densities are intended to be achieved through the subdivision process except in cases where regulations or site specific characteristics render such densities infeasible.*

- Effectual mitigation to reduce GHG emissions to less than a significant level for the horizon years of 2030 and 2050 would need to be implemented for all projects within the Project areas, even those project applications that would normally be processed as ministerial actions. Furthermore, the State has not established a 'project-level emission reduction' threshold to determine the project-specific emission reduction percentage necessary for individual projects to meet the 2030 statewide emission reduction target of 40% below 1990 emissions.
- Requiring additional mitigation and analysis for future development projects beyond what is currently required for like projects outside the Project areas is not socially or economically equitable for those properties located within the Project areas because property owners within the Project area would be subject to development costs and requirements beyond those imposed on other property owners. Further, the proposed Project would either decrease, or retain the current development potential for 95% of the parcels (refer to Table 2.15-4). The reduction of development potential translates into a reduction of future projected GHG emissions.
  - 34% of the Project area parcels would lose development potential under the proposed Project, and
  - 61% of Project area properties would not receive any change in development potential under the proposed Project.

Because the measure listed above has been found to be infeasible by the County and would not be implemented, impacts related to compliance with California GHG reduction goals would remain significant and unavoidable.

It should be noted that the County is undertaking the preparation of a Climate Action Plan (CAP) that will address long-term GHG emissions County-wide. The CAP will accommodate future growth under the proposed Project and other reasonably foreseeable GPAs in the County. The CAP is anticipated to provide streamlining opportunities for projects that are determined to be consistent with a "plan for the reduction of greenhouse gases" (CEQA Guidelines Section 15183.5).

Implementation of the proposed Project will reduce the GHG emissions in comparison to the current land use designations. However, important factors are not currently known: the effectiveness of regulatory actions already adopted as part of the implementation of the Global Warming Solutions Act of 2006; and the potential for application of new regulations and their effectiveness; the cost and feasibility of certain policies that may be mandated as mitigation are not known. Therefore, GHG impacts would not be feasibly mitigated to adopted GHG reduction target levels for 2020, 2030 and 2050. For these reasons, and because development resulting from the proposed Project would emit a substantial level of GHG emissions, the residual impact is potentially significant and unavoidable.

2.15.4.2 *Potential Effects of Global Climate Change on the Proposed Project*

Direct and cumulative impacts associated with the potential effects of global climate change on the proposed Project, as pertains to future development of land uses within the Project areas addressed in this SEIR, would be reduced with implementation of the same applicable General Plan policies and mitigation measures as identified in the General Plan Update PEIR, and repeated in Section 2.15.4.1. However, impacts would not be reduced to below a level of significance with incorporation of these measures. Additional mitigation measures are proposed in the other sections of this SEIR to mitigate impacts related to water supply, special status plant and wildlife species, and wildland fires.

Chapter 2.14, Utilities includes mitigation measures USS-4.1 through 4.7 to mitigate impacts associated with water supply. USS-4.1 will prevent future GPAs from development that would result in a demand for water exceeding available imported water or groundwater supplies. USS-4.2 can potentially reduce future demand on existing water supplies. USS-4.3 will prevent future discretionary projects in water district areas that require imported water supply in exceedance of existing availability. USS-4.3 will also reduce future demand on water supply in the County and serve as an example to other land uses that rely on water supply. USS-4.4 will minimize drawdown of groundwater supply, allow for recharge of groundwater storage, and reduce future demand of imported water and groundwater. USS-4.5 will identify and minimize adverse environmental effects on groundwater resources. USS-4.6 will potentially allow for replacement of water intensive uses in Borrego with land uses that require less groundwater. USS-4.7 will

reduce the potential for exceedance of water availability under the 2011 General Plan. These measures would reduce impacts associated with water supply availability, although not to below a level of significance.

Chapter 2.4, Biological Resources includes mitigation measures Bio-1.1 through 1.7 to mitigate impacts associated with special status plant and wildlife species. Bio-1.1 will promote conservation of natural resources and open space while improving mechanisms for flexibility in project design so that production of housing stock is not negatively impacted. Bio-1.2 will ensure that success is continued and carried forward to future MSCP efforts. Bio-1.3 will benefit sensitive species by preserving sizeable areas of habitat in the unincorporated County. Bio-1.4 will help continue the County's success with acquiring large areas of open space that are utilized by resident and migratory special status species and other sensitive natural communities throughout the region. Bio-1.5 directs the County to utilize County Guidelines for Determining Significance for Biological Resources and GIS records to gather information that will be used to avoid or mitigate potential project impacts as appropriate. Ordinances listed in Bio-1.6 are part of the County regulatory code and explicitly mandate preservation of sensitive biological resources. Implementation of ordinances listed in Bio-1.7 reduces potential indirect impacts to special status species and their habitats. These measures would reduce impacts associated with special status plant and wildlife species, although not to below a level of significance.

Chapter 2.6, Hazards includes mitigation measures Haz 4.1 through 4.4 that would reduce impacts associated with wildland fires. Implementation of Haz-4.1 will typically prevent future placement of people and structures near wildland fire hazards. Haz-4.2 will help minimize fire hazard losses while also avoiding significant impacts to environmental resources. Haz-4.3 can substantially reduce potential losses in the event of wildland fire. Haz-4.4 will result in subdivision designs with improved fire protection. Implementation of the mitigation measures would reduce impacts related to wildland fire hazards, although not to below a level of significance.

As discussed above, compliance with General Plan policies and General Plan Update PEIR mitigation measures would reduce the extent and severity of climate change-related impacts to the land uses developed under the proposed Project. However, the Project areas provide a greater number of natural, physical, and environmental constraints than urbanized areas in the County, a higher occurrence of sensitive plant or animal species, and limitations in adequate provision of infrastructure and utilities or public services (e.g., fire protection, water supply). Some of these impacts, such as those related to water supply, wildland fires and ecosystems are expected to be more severe for the proposed Project as compared to the 2011 General Plan due to the proposed development in and around the Cleveland National Forest which is comprised of more abundant sensitive natural resources in comparison to urbanized areas of the County. Therefore, impacts would not be reduced to below a level of significance; this impact would be significant and unavoidable.

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