

2.7 Greenhouse Gas Emissions

This section presents a summary of the current state of climate change science and greenhouse gas (GHG) emissions sources; a summary of applicable regulations; and a discussion of the project's potential GHG emissions and their potential contribution to global climate change. Potential impacts of the project are analyzed, and mitigation measures are provided for those impacts determined to be significant.

Comments received during the Notice of Preparation (NOP) scoping process regarding environmental impacts and potential alternatives and mitigation measures included the following: address how the Climate Action Plan (CAP) will help the region achieve Senate Bill (SB) 375 emissions reduction targets; evaluate General Plan Amendments (GPAs) in the context of the region's ability to meet SB 375 mandated targets; provide sound extrapolation methodologies for meeting 2030 emissions reduction target; statement that the CAP should establish climate stabilizing target of 80% below 1990 GHG emissions level by 2030; CAP should meet SB 32 emissions reduction targets; CAP should be based on adopted land uses only to establish baseline and should not include GPAs; CAP should include a timeline for preparation, implementation, monitoring, and enforcement to 2050; CAP should secure and describe funding for 100% of 2020 goals and strategies and 50% of 2030 goals and strategies; CAP should publish regular inventory and monitoring reports; should include carbon farming measures; should include quantifiable and enforceable GHG reduction measures; should implement transit, walking, and biking land use policies that reduce vehicle miles traveled through smart growth; should commit to zero waste and include waste reducing measures; should include a lifecycle assessment of waste and recycled materials¹; should evaluate carbon sequestration potential county-wide; should consider off-site mitigation of carbon; should account for all transportation GHG emissions in the county, including beginning, ending, and pass-through trips; County should require GPAs to achieve net zero GHG emissions if processed before the CAP; should differentiate between County-based and state and federal GHG emission reductions; should adopt zero emissions building code; should achieve climate stabilization targets in all six categories of GHG emissions; should evaluate emissions through 2050; and should evaluate GHG impacts related to transportation and energy used to pump groundwater.

These concerns are addressed in this section and throughout the CAP, except as noted in the footnote below. A copy of the NOP and comment letters received in response to the NOP are included in Appendix A of this Draft Supplement to the 2011 General Plan Update (GPU) Program Environmental Impact Report (2011 GPU PEIR) (Draft SEIR).

2.7.1 Existing Conditions

The 2011 GPU PEIR 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 2011 GPU PEIR included an overview of GHGs and climate change and

¹ Amendments to the CEQA Guidelines in 2009 removed the term "lifecycle" as there is no consistent regulatory definition of the term and requiring such an analysis would not be consistent with CEQA (See Final Statement of Reasons – Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97 [December 2009]).

a summary of existing GHG emissions inventories for the U.S., California, and the County. Because information related to GHGs and inventories has evolved since the 2011 GPU PEIR, an updated discussion of existing conditions is provided below.

2.7.1.1 The Physical Scientific Basis

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into the atmosphere is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Human-caused emissions of these GHGs more than natural ambient concentrations are believed responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations, in combination with other anthropogenic factors (Intergovernmental Panel on Climate Change [IPCC] 2014: 3, 5).

Each GHG has a different capability of trapping heat in the atmosphere, known as its global warming potential (GWP), which is normalized relative to CO₂ and expressed in carbon dioxide equivalent (CO₂e). The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014: 3, 87). In general, the 100-year GWPs reported by IPCC are used to estimate GHG emissions. The GWPs used in the CAP GHG emissions inventory are from IPCC Fourth Assessment Report (IPCC 2007). Based on this report, the GWP for CH₄ is 25 (so emissions of 1 MT of CH₄ are equivalent to emissions of 25 MT of CO₂), and the GWP for N₂O is 298 (IPCC 2007).

Climate change is a global problem. 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 one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO₂ is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO₂ emissions,

approximately 55% is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45% of human-caused CO₂ emissions remain stored in the atmosphere (IPCC 2013: 467).

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known, but is enormous; and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts relative to the effects on climate are inherently cumulative.

Greenhouse Gas Emission Sources

Emissions of GHGs are attributable in large part to human activities associated with the transportation, industrial/manufacturing, electricity generation, agricultural, residential, and commercial emissions sectors (California Air Resources Board [CARB] 2017a). In California, the transportation sector is the largest emitter of GHGs, followed by the industrial sector (CARB 2017b). Emissions of CO₂ are byproducts of fossil fuel combustion. Methane, 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 is also largely attributable to agricultural practices and soil management. CO₂ sinks or reservoirs are the two most common processes for removing CO₂ from the atmosphere. Sinks or reservoirs include vegetation and oceans. Vegetation and oceans absorb CO₂ through sequestration and dissolution (CO₂ dissolving in the water), respectively, and are the two most common CO₂ removal processes.

The 2011 GPU PEIR included a baseline GHG emissions inventory for County local government operations and its jurisdictional land use area (the unincorporated area) for 2006. The CAP includes an emissions inventory for the year 2014 to more accurately characterize existing conditions. Inventory methods and data collection tools have evolved since the 2011 GPU PEIR and the 2014 inventory provides a current snapshot of emissions in the county. The 2014 inventory is provided in **Table 2.7-1** at the end of this section.

Effects of Climate Change on the Environment

The 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 to 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).

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 projects that the Sierra snowpack will experience a 25-40% reduction from its historic average by 2050 (California Department of Water Resources 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 and flood control system.

In addition to being drought-prone, California is at risk of losing at least 25% of standing live forest or 12% of the total forested area because of insects and disease. Tree mortality is already prevalent throughout California. There is usually a lag time between drought years and tree mortality; however, there has been a sharp increase in tree mortality from the past four years of drought (CARB 2017a: 10).

Another outcome of global climate change is sea level rise. Sea level rose approximately seven inches during the last century and, if 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 various 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, 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 planning tool developed by the California Energy Commission (CEC) and the University of California Berkeley Geospatial Innovation Facility. Cal-Adapt currently 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. San Diego county's historical average annual maximum temperature, based on data from 1950 to 2005, is 74.9 degrees Fahrenheit (°F). Under the Low-Emissions Scenario, annual average maximum temperature is projected to increase to 79.8°F by 2099, an increase of 4.9°F (CEC 2017a). The annual average maximum temperature under the High-Emissions Scenario is projected to increase 9.9°F to 84.8°F by the end of the century (2099) (CEC 2017b).

2.7.2 Regulatory Framework

GHG emissions and responses to global climate change are regulated by a variety of federal, state, and local laws and policies. Section 2.17.2 of the 2011 GPU PEIR described 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 2011 GPU PEIR are summarized below.

Federal

Supreme Court Ruling of Carbon Dioxide as a Pollutant

The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for implementing the federal Clean Air Act (CAA) and its amendments. The Supreme Court of the United States ruled on April 2, 2007 that CO₂ is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. The ruling in this case resulted in EPA taking steps to regulate GHG emissions and lent support for state and local agencies' efforts to reduce GHG emissions.

National Program to Cut Greenhouse Gas Emissions and Improve Fuel Economy for Cars and Trucks

On August 28, 2014, EPA and the U.S. 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). The EPA proposed the first-ever national GHG emissions standards under the CAA, and NHTSA proposed Corporate Average Fuel Economy standards under the Energy Policy and Conservation Act. This 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. This program will increase fuel economy to the equivalent of 54.5 miles per gallon for the fleet of cars and light-duty trucks by model year 2025, and, as of 2016, NHTSA and EPA were developing additional phases to address GHG emission standards for new medium- and heavy-duty trucks (NHTSA 2016). This program is currently under review by EPA, but at the time of publication of this Draft SEIR has not been changed.

State

Executive Order S-3-05

Executive Order (EO) 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 problems, 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% below the 1990 level by 2050.

This executive order was the subject of a California Supreme Court decision, *Cleveland National Forest Foundation v. San Diego Association of Governments (SANDAG)* (July 13, 2017) 2017 Cal. LEXIS 5125. The California Supreme Court ruled that SANDAG did not abuse its discretion by declining “to adopt the 2050 goal as a measure of significance because the Executive Order does not specify any plan or implementation measures to achieve its goal.”

In addition to concluding that an EIR need not use this executive order’s goal for determining significance, the Supreme Court described several principles relevant to CEQA review of GHG impacts, including: (1) EIRs should “reasonably evaluate” the “long-range GHG emission impacts for the year 2050;” (2) the 2050 target is “grounded in sound science” in that it is “based on the scientifically supported level of emissions reduction needed to avoid significant disruption of the climate;” and (3) in the case of the SANDAG plan, the increase in long-range GHG emissions by 2050, which would be substantially greater than 2010 levels, was appropriately determined to be significant and unavoidable.

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

In September 2006, Governor Schwarzenegger signed the California Global Warming Solutions Act of 2006 (AB 32). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also provides that these reductions “...shall remain in effect unless otherwise amended or repealed. (b) It is the intent of the Legislature that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020. (c) The (Air Resources Board) shall make recommendations to the Governor and the Legislature on how to continue reductions of greenhouse gas emissions beyond 2020.” [California Health and Safety Code, Division 25.5, Part 3, Section 38551]

Assembly Bill 32 Climate Change Scoping Plan and Updates

In December 2008, CARB adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reductions of approximately 118 million metric tons of CO₂ equivalent (MMTCO_{2e}) emissions, or approximately 21.7% from the state’s projected 2020 emission level of 545 MMTCO_{2e} under a business-as-usual scenario (this is a reduction of 47 MMTCO_{2e}, or almost 10%, from 2008 emissions). In May 2014, CARB released and subsequently adopted the *First Update to the Climate Change Scoping Plan* to identify the next steps in reaching AB 32 goals and evaluate progress that has been made between 2000 and 2012 (CARB 2014:4 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 2014:ES-2). The update also reports the trends in GHG emissions from various emissions sectors (e.g., transportation, building energy, agriculture).

On January 20, 2017, CARB released its proposed 2017 Climate Change Scoping Plan Update (2017 Scoping Plan Update), which lays out the framework for achieving the 2030 reductions as established in more recent legislation. The proposed 2017 Scoping Plan Update identifies the GHG reductions needed by each emissions sector to achieve a statewide emissions level that is 40% below 1990 levels before 2030. At the time of writing this environmental document, the proposed 2017 Scoping Plan Update has not been adopted.

CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, EO B-30-15, and EO S-3-05. This is confirmed in the Second Update, which states:

The Proposed Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while also identifying new, technologically feasible and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities. The Proposed Plan is developed to be consistent with requirements set forth in AB 32, SB 32, and AB 197 (CARB 2017a, p. 7).

Senate Bill 375

Senate Bill 375, signed by the Governor in September 2008, aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy, showing prescribed land use allocation in each MPO's Regional Transportation Plan. CARB, in consultation with the MPOs, provides each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in their respective regions for 2020 and 2035.

SANDAG serves as the MPO for the San Diego region. SANDAG adopted its Regional Plan on October 9, 2015. The Regional Plan combines the two existing documents: the Regional Comprehensive Plan (RCP), and the Regional Transportation Plan and its Sustainable Communities Strategy (RTP/SCS). The SCS details how the region will reduce GHG emissions to state-mandated levels. SANDAG was tasked by CARB to achieve a seven% reduction in per capita GHGs from passenger cars and light trucks by 2020 and a 13% reduction by 2035, relative to emission levels in 2005. The region would achieve or exceed both reduction targets by implementing its SCS (SANDAG 2015).

Executive Order B-30-15

On April 20, 2015, Governor Edmund G. Brown Jr. signed EO B-30-15 to establish a California GHG reduction target of 40% below 1990 levels by 2030 (this executive order preceded SB 32). 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, discussed above) (CARB 2017a). California's new emission reduction target of 40% below 1990 levels by 2030 will make it possible to reach the goal of reducing emissions to 80% below 1990 levels by 2050.

Senate Bill 32 and Assembly Bill 197 of 2016

In September 2016, Governor Brown signed SB 32, which serves to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40% below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the state's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80% below 1990 emissions levels by 2050.

Governor Brown signed AB 197 (Garcia, Chapter 250, Statutes of 2016) as a companion bill to SB 32. AB 197 creates a legislative committee to oversee CARB and requires CARB to take specific actions when adopting plans and regulations pursuant to SB 32 related to disadvantaged communities, identification of specific information regarding reduction measures, and information regarding existing greenhouse gases at the local level.

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% 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% fewer GHGs and 75% fewer smog-forming emissions than the statewide fleet in 2016 (CARB 2012).

Senate Bill X1-2, the California Renewable Energy Resources Act of 2011

SB X1-2 of 2011 requires all California utilities to generate 33% of their electricity from renewables by 2020. SB X1-2 sets a three-stage compliance period requiring all California utilities, including independently owned utilities, energy service providers, and community choice aggregators, to generate 20% of their electricity from renewables by December 31, 2013; 25% by December 31, 2016; and 33% by December 31, 2020. SB X1-2 also requires the renewable electricity standard to be met increasingly with

renewable energy that is supplied to the California grid from sources within, or directly proximate to, California. SB X1-2 mandates that renewables from these sources make up at least 50% of the total renewable energy for the 2011-2013 compliance period, at least 65% for the 2014-2016 compliance period, and at least 75% for 2016 and beyond. In October 2015, SB 350, discussed in more detail below, was signed by Governor Brown, which requires retail sellers and publicly-owned utilities to procure 50% of their electricity from renewable resources by 2030.

California Building Efficiency Standards (Title 24, Part 6)

Buildings in California are required to comply with California's Building Energy Efficiency Standards for Residential and Non-residential Buildings established by CEC regarding energy conservation standards and found in Title 24, Part 6 of the California Code of Regulations. The standards were first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption.

CEC adopted the 2016 Building Energy Efficiency Standards for Residential and Non-residential Buildings in 2015 (2016 Title 24 standards). The 2016 Title 24 standards went into effect on January 1, 2017. All buildings for which an application for a building permit is submitted on or after January 1, 2017 must follow the 2016 Title 24 standards (CEC 2015).

The CEC is required to adopt standards every three years that are cost effective for homeowners over the 30-year lifespan of a building. The standards are updated to consider and incorporate new energy efficient technologies and construction methods. The standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants and help preserve the environment. Single family homes built to the 2016 standards will use about 12% less electricity and 21% less natural gas for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards. In 2008, California set energy-use reduction goals, targeting zero net energy (ZNE) use in all new homes by 2020 and commercial buildings by 2030. The ZNE goal means new buildings must use a combination of improved efficiency and distributed renewable energy generation to meet 100% of their annual energy need. The 2019 standards will take the final step to achieve ZNE for newly constructed residential buildings throughout California (CEC 2016b).

California Integrated Waste Management Act

To minimize the amount of solid waste that must be disposed of in landfills, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties were required to divert 25% of all solid waste from landfill facilities by January 1, 1995, and 50% by January 1, 2000. Through other statutes and regulations, this 50% diversion rate also applies to state agencies. In order of priority, waste reduction efforts must promote source reduction, recycling and composting, and environmentally-safe transformation and land disposal. Per capita disposal rates for the unincorporated county are below the target disposal rates established by AB 939 (1989; California Department of Resources Recycling and Recovery [CalRecycle] 2017).

In 2011, AB 341 modified the California Integrated Waste Management Act and directed CalRecycle to develop and adopt regulations for mandatory commercial recycling. The resulting Mandatory Commercial Recycling Regulation (2012) requires that on and after July 1, 2012, certain businesses that generate four cubic yards or more of commercial solid waste per week shall arrange recycling services. To comply with this requirement, businesses may either separate recyclables and self-haul them or subscribe to a recycling service that includes mixed waste processing. AB 341 also established a statewide recycling goal of 75%; the 50% disposal reduction mandate still applies for cities and counties under AB 939, the Integrated Waste Management Act.

Senate Bill 350

SB 350 requires the state to set GHG emission reduction targets for the load serving entities through Integrated Resource Planning. SB 350 requires an increase in the Renewables Portfolio Standard (RPS) to 50% by 2030 and doubling energy savings in electricity and natural gas end uses. The goal of the new RPS and energy efficiency is to create more jobs, grow the state's economy, and improve the public health.

Adopted 2011 GPU Policies²

The goals and policies related to GHG emissions that were adopted as part of the 2011 GPU and are applicable to the project include the following:

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

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.

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.

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.

² Proposed revisions to 2011 GPU Goal COS-20 and Policy COS-20.1 are described on page 1-15 of this Draft SEIR.

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.

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.

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.

Policy COS-20.1: Climate Change Action Plan. Prepare, maintain, and implement a climate change action plan with a baseline inventory of GHG emissions from all sources, GHG emissions reduction targets and deadlines, and enforceable GHG emissions reduction measures.

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.

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.

The project would update and implement Policy COS-20.1 as detailed in Section 1.2.3 of Chapter 1, Project Description.

Adopted 2011 GPU PEIR Mitigation Measures³

Mitigation measures related to GHG emissions that were adopted as part of the 2011 GPU PEIR and are applicable to the project include the following:

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-1.2 Prepare a County Climate Change Action Plan with an update baseline inventory of GHG emissions from all sources, more detailed GHG emissions reduction targets and deadlines; and comprehensive and enforceable GHG emissions reduction measures that will achieve a 17% reduction in emissions from County operations from 2006 by

³ Proposed revisions to 2011 GPU PEIR Mitigation Measures CC-1.2, CC-1.7, and CC-1.8 are described on pages 1-15 through 1-17 of this Draft SEIR.

2020 and a 9% reduction in community emissions between 2006 and 2020. Once prepared, implementation of the plan will be monitored and progress reported on a regular basis. *[Proposed for modifications as part of this Draft SEIR, see Chapter 1, Project Description]*

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 to reduce GHG emissions. Should the recommendation not be released in a timely manner, the County will prepare its own threshold. *[Proposed for modifications as part of this Draft SEIR, see Chapter 1, Project Description]*

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. *[Proposed for modifications as part of this Draft SEIR, see Chapter 1, Project Description]*

CC-1.9 Coordinate with APCD, San Diego Gas & Electric, 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, Multiple Species Conservation Program (MSCP) and prepare MSCP Plans for North and East County 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, California Department of Transportation (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 Department of Planning and Land Use 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.

The project would update and implement mitigation measures CC-1.2, CC-1.7, and CC-1.8 as described in Section 1.2.3 of Chapter 1, Project Description.

2.7.3 Issues Not Discussed Further

As described in Chapter 1.0, Project Description, in response to litigation and considering legislative changes that have occurred since preparation of the 2012 CAP, the County prepared a new CAP (subject of this Draft SEIR). The CAP and the targets and strategies identified therein necessitate changes to Goal COS-20 and Policy COS-20.1 of the County's General Plan (2011 GPU) and mitigation adopted in the 2011 GPU PEIR, Mitigation Measures CC-1.2, CC-1.7, and CC-1.8 to attain consistency with current legislative requirements. These changes require a General Plan Amendment to the County's General Plan and revision to the associated mitigation monitoring and reporting program (hereafter these two actions collectively refer to as (GPA)) as part of the administrative approval process. The Draft SEIR evaluates the GPA as part of the actions associated with the CAP because the changes reflected in the GPA support and are consistent with implementation of the CAP and its GHG targets and GHG reduction measures. Therefore, the GPA is not addressed as a separate impact discussion below, but its impacts are included within the overall impact analysis of the CAP.

The Draft SEIR also evaluates the impacts associated with the implementation of proposed GHG Threshold, Guidelines for Determining Significance for Climate Change (Guidelines), and the Report Format and Content Requirements. The proposed GHG Threshold requires consistency with the CAP, and is the level below which a project would be determined to result in less-than-significant GHG impacts. To achieve consistency, a project will be required to implement the applicable GHG reduction measures outlined in the CAP. All measures have been evaluated throughout the Draft SEIR. Therefore, adoption of a GHG Threshold that establishes a requirement to be consistent with the CAP, the individual measures of which have been evaluated throughout this Draft SEIR, would not require a separate impact analysis because the impacts of establishing that threshold and what it would take to meet the threshold have been fully evaluated.

The Guidelines would provide direction to project applicants on how a project could achieve consistency with the CAP. The Guidelines are proposed to include a checklist that would require applicants to demonstrate how a project would be consistent with the CAP including through implementation of GHG reduction measures. The specific actions that would result from the Guidelines would be project-specific implementation of approved GHG reduction measures, the environmental impacts of which have been evaluated throughout this Draft SEIR. Therefore, evaluation of the Guidelines as a separate impact discussion is not provided below.

Finally, the Report Format and Content Requirements document would not result in any physical impact on the environment as it simply details the format for how reports should be written. As a result, this document is also not separately discussed below.

In summary, the GPA, GHG Threshold, Guidelines, and Report Format and Content Requirements are not addressed as a separate impact discussion below. The GPA, GHG Threshold, and Guidelines are combined in the overall impact analysis of the CAP, while the Report Format and Content Requirement document provides technical direction to future project applicants and will not result in any physical impacts.

2.7.4 Analysis of Project and Cumulative Impacts

The cumulative impact analysis study area for GHG emissions in the 2011 GPU PEIR was identified as the entire unincorporated county and County local government operations. The cumulative study area for GHG emissions for the project is the same as the 2011 GPU PEIR. The CAP includes emission forecasts (i.e., projections) that are based on growth projections from the 2011 GPU, in addition to GPAs adopted since adoption of the 2011 GPU.

The baseline GHG emissions inventory for the CAP does not include emissions attributable to GPAs that propose increased density or intensity above what is allowed in the 2011 GPU. Even though there were GPAs that were adopted between 2011 (adoption of the 2011 GPU) and 2014 (inventory base year), none of these adopted GPAs were constructed by 2014, and, therefore, their GHG emissions are not realized by the year 2014. However, the CAP GHG projections to 2020, 2030, and 2050 include GHG emissions from the GPAs that were adopted by the County between August 2011 (adoption of the 2011 GPU) and August 2017 (date of release of this Draft CAP and Draft SEIR for public review). GPA projects which were not adopted by August 2017, including those currently in process and under County review have not been included in the 2014 GHG emission inventory or GHG projections to 2020, 2030, and 2050. See discussion in section 2.7.4.1 and 2.7.4.2 regarding GPAs in process.

The 2011 GPU PEIR evaluated the potential effects of the 2011 GPU related to GHG emissions, and consistency with the goals and strategies of AB 32. The project would not redesignate or intensify the land use types analyzed in the 2011 GPU PEIR. Therefore, the conclusions in Chapter 2.17 of the 2011 GPU PEIR on pages 2.17-33 through 2.17-34 are still valid and are incorporated by reference. The project uses a current inventory of GHG emissions to reflect existing conditions (see **Table 2.7-1**) and extends the analysis of GHG emissions associated with growth in the unincorporated county beyond 2020 to be consistent with recent legislative changes under SB 32. The project would update and implement Goal COS-20 and Policy COS-20.1 of the 2011 GPU and mitigation measures CC-1.2, CC-1.7, and CC-1.8 from the 2011 GPU PEIR.

The issue of global climate change is inherently a cumulative issue, as the GHG emissions of individual projects cannot be shown to have any material effect on global climate. Thus, the impact analysis provided below addresses both the project and cumulative impact in one impact discussion. In addition, cumulative impacts in consideration of past, present, and reasonably foreseeable probable future projects are analyzed at the end of each issue related to consideration of GPAs.

The CAP provides a framework of strategies, measures, and supporting efforts to reduce GHG emissions consistent with the 2011 GPU and 2011 GPU PEIR and state GHG reduction goals. The overarching intent of the CAP is to reduce GHG emissions; however, certain measures may lead to a temporary increase in GHG emissions in the unincorporated county and are analyzed below.

Proposed GHG Reduction Measures

Table 1-1 of the Draft SEIR provides a list of proposed GHG reduction measures and supporting efforts that would be implemented by the CAP. However, only those measures that may temporarily increase GHG emissions and could potentially result in a significant impact within the unincorporated county are described and evaluated below. None of the proposed measures indicate where specific improvements would be constructed, their size, or specific characteristics. As a program EIR, the Draft SEIR does not, and cannot, speculate on the individual environmental impacts of specific future projects/improvements. However, implementation of all GHG reduction measures and supporting efforts were considered during preparation of the Draft SEIR, to the degree specific information about implementation is known. Consistent with the requirements of CEQA Guidelines Section 15168, this Draft SEIR provides a programmatic discussion of the potential general impacts of implementing these measures, rather than project-level or site-specific physical impacts of such actions. This is consistent with the scope of analysis in the 2011 GPU PEIR.

Strategy T-2: Shift Toward Alternative Modes of Transportation

Measure T-2.1: Improve Roadway Segments as Multi-Modal. Improve roadway segments, intersections, and bikeways to implement multi-modal enhancements for pedestrian and cyclist comfort and safety along County-maintained public roads by improving 700 centerline miles of roadway segments, including 250 intersections and 210 lane miles of bikeway improvements by 2030 and an additional 500 centerline miles of roadway segments, including 250 intersections and 210 lane miles of bikeway improvements by 2050. This measure would implement roadway improvements to reduce Vehicle Miles Traveled (VMT) by calming traffic and improving the bicyclist and pedestrian infrastructure and would occur as part of resurfacing projects within existing paved areas. GHG emissions could result from construction activities.

Strategy T-3: Decarbonize On-Road and Off-Road Vehicle Fleet

Measure T-3.5: Install Electric Vehicle Charging Stations. Install a total of 2,040 Level 2 electric vehicle charging stations (EVCS) through public-private partnerships at priority locations in the unincorporated county by 2030. GHG emissions could result from construction activities.

Strategy T-4: Invest in Local Projects to Offset Carbon Emissions

Measure T-4.1: Establish a Local Direct Investment Program. Close the 2030 GHG emissions target gap of ~~495,514~~ 175,460 MTCO_{2e} through direct investments in local projects that would offset carbon emissions within the unincorporated county by 2030. This measure would result in direct investments for local projects. The specific protocols that would be utilized are not known and evaluation of such actions would be speculative. However, this Draft SEIR conservatively assumes that some construction-related activities may occur with individual project implementation. Please see Chapter 2.7 and Appendix B of this Draft SEIR for additional information on direct investment projects and protocols. Protocols could include the following types of projects:

- Biomass Conversion
- Boiler Efficiency Retrofits
- Wetland Creation
- Forest Restoration
- Compost Additions to Rangeland
- Organic Waste Digestion Capture
- Manure Management
- Building Weatherization Programs
- Urban Forest Management

Supporting Efforts for the Built Environment and Transportation Category

- Collaborate with incorporated cities, California Department of Transportation (Caltrans) and SANDAG to consider additional park-and-ride facilities
- Collaborate with SANDAG to encourage installation of EV charging stations in new residential and non-residential developments.

Strategy E-1: Increase Building Energy Efficiency

Measure E-1.1: Achieve 10% greater building energy efficiency in all new non-residential development than is required by the 2016 State Energy Code (Title 24 Part 6) by 2020; require all new residential development to meet the State's Zero Net Energy (ZNE) standards by 2020; and require all new non-residential development to the State's ZNE standards by 2030. This measure would result in energy efficiency regulations that are 10% more efficient than current standards. This would result in GHG emissions reductions related to increased energy efficiency. GHG emissions would be attributed to the installation, operation, and maintenance of small-scale solar systems and battery storage, or small-scale wind turbines with new residential construction which may include roof or ground-mounted systems.

Strategy E-2: Increase Renewable Electricity Use

Measure E-2.1: Increase Renewable Electricity. Achieve 90% renewable electricity for the unincorporated county by 2030. This measure would result in the construction of distributed generation (small-scale renewables) on new and existing buildings, including solar photovoltaics, small wind-turbines, and energy storage solutions. This may also directly or indirectly require the construction of large-scale renewable energy generation systems to satisfy increased demand. This could include the construction of large-scale photovoltaic solar arrays fields, photovoltaic concentrator technology, geothermal and/or wind turbines. GHG impacts could result from construction and maintenance activities.

Measure E-2.2: Increase Renewable Electricity in Non-Residential Development. Require installation of renewable energy systems (e.g., solar photovoltaics, wind) on new non-residential development. This measure would result in an increase in solar photovoltaic and small-scale wind turbines on new non-residential buildings/properties throughout the unincorporated county. GHG impacts could result from construction activities associated with installation of wind turbines or solar systems for non-residential scaled buildings.

Measure E-2.3: Install Solar Photovoltaics in Existing Homes. Increase installation of photovoltaic (PV) electrical systems in 52,273 existing residential homes by 2020 and additional 77,902 homes by 2030. This measure would result in an increase in photovoltaic solar on existing residential buildings throughout the unincorporated County. Physical changes from installing new solar systems on existing buildings could result related to changing visual context and construction impacts. GHG impacts could result from construction activities.

Measure E-2.4: Increase Use of Renewable Electricity for County Operations. Generate 10% of the County's operational electricity with renewables by 2020 and 20% by 2030. Implementation of this measure would result in the development of County-owned renewable energy projects. Could result in GHG emissions from the installation, operation, and maintenance of new photovoltaic, small-scale wind turbines, and other renewables on County facilities.

Strategy SW-1: Increase Solid Waste Diversion in the Unincorporated County

Measure SW-1.1: Increase Solid Waste Diversion. Achieve 75% solid waste diversion by 2030. This measure would result in new/expanded composting projects and facilities throughout the unincorporated County. This could result in a variety of physical impacts related to the construction and operation of such facilities dependent upon the scale of facilities. GHG emissions would occur with construction and operation of facilities.

Supporting Efforts for the Water and Wastewater Category

Work with Padre Dam Municipal Water District (MWD) to advance the Advanced Water Purification (AWP) Program.

Strategy A-1: Support Conversion of Agricultural Equipment to Alternative Fuels

Measure A-1.1: Convert Farm Equipment to Electric. Convert farm equipment used in the unincorporated county from gas- and petroleum-diesel-powered to electric to achieve 8% conversion by 2030. This measure would result in the development of an incentive program that would aid in the transition from gas and diesel-powered engines to electric engines in agricultural equipment. Would result in beneficial physical impacts including improved air quality, and a reduction in GHGs. May result in a small increase in electricity consumption and corresponding GHG emissions.

Measure A-1.2: Convert Stationary Irrigation Pumps to Electric. Convert stationary petroleum-diesel or gas-powered irrigation pumps to electric to achieve four electric stationary irrigation pumps by 2020 and an additional 40 electric stationary irrigation pumps by 2030. This measure would result in an incentive program that would aid in the conversion from diesel or gas-powered irrigation pumps to electric- powered pumps. Would result in beneficial physical impacts including improved air quality, and a reduction in GHGs. Nominal physical impacts related to conversion activities and an increase in energy consumption may result from the replacement of pumps.

Strategy A-2: Increase Carbon Sequestration

Measure A-2.1: Increase Residential Tree Planting. Require trees to be planted per every new residential dwelling unit constructed in the unincorporated county at a rate of two trees per new dwelling unit. This measure would result in the development of a county-wide tree planting program for the purpose of increasing tree canopy coverage. Would result in beneficial impacts that would allow an increase in carbon sequestration throughout the unincorporated County. Physical impacts may occur related to the consumption of water during the tree establishment period, however, preference would be given to areas with recycled and graywater infrastructure. Small impacts related to distribution, installation, and early maintenance of trees could occur.

Measure A-2.2: Increase County Tree Planting. Prepare and adopt a tree planting program for the unincorporated county to plant a minimum of 3,500 trees annually starting in year 2017. This measure would result in the development of a county-wide tree planting program for the purpose of increasing tree canopy coverage. Would result in beneficial impacts that would allow an increase in carbon sequestration throughout the unincorporated County. Physical impacts may occur related to the consumption of water during the tree establishment period, however, preference would be given to areas with recycled and graywater infrastructure. Small impacts related to distribution, installation, and early maintenance of trees could occur.

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

This section describes potential project and cumulative impacts on GHG emissions with implementation of the project.

Guidelines for Determination of Significance

Based on Appendix G of the CEQA Guidelines, which is reflective of the guidelines that were utilized in the 2011 GPU PEIR, the project would have an impact if it would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

Impact Analysis

2011 GPU PEIR Determination

The 2011 GPU PEIR evaluated impacts from the adoption of the goals and policies of the 2011 GPU countywide, including the project area. In addition, the 2011 GPU PEIR evaluated buildout of the land use designations applied throughout the unincorporated area.

The 2011 GPU PEIR determined that buildout under the 2011 GPU would result in potentially significant impacts related to GHG emissions. The discussion of impacts can be found in Chapter 2.17 Global Climate Change, pages 2.17-12 through 2.17-22 of the GPU PEIR and is hereby incorporated by reference. The 2011 GPU 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 2011 GPU goals and policies; and, mitigation measures/implementation programs identified in the 2011 GPU PEIR. Policies and mitigation measures related to GHG emissions are listed above under Section 2.7.2, Regulatory Framework. As described above, the CAP updates and implements Policy COS-20.1 of the 2011 GPU and mitigation measures CC-1.2, CC-1.7, and CC-1.8 of the 2011 GPU PEIR. The Draft SEIR evaluates these changes as part of the actions associated with the CAP because they are consistent with implementation of the CAP and its GHG targets and GHG reduction measures.

The 2011 GPU PEIR included a 2014 inventory of GHG emissions for the unincorporated County for the years 1990, 2006, representing baseline conditions, and 2020, representing project conditions. The 2011 GPU PEIR acknowledged that although the horizon year for the 2011 GPU may be as far out as 2050 based on the draft SANDAG 2050 forecasts adopted in 2010, impacts were evaluated for a 2020 analysis year to be consistent with AB 32, which was the only legislatively adopted statewide reduction target at the time.

The CAP provides an updated current inventory of GHG emissions in the unincorporated areas and from County local government operations for 2014, which is the most recent year complete data is available. In addition to being the most recent year data is available,

the 2014 inventory year for the CAP corresponds to the most recent state inventory available for 2014. This base year data at the state level can be used to determine the equivalent relative reduction from 2014 levels to achieve 1990 emissions and to achieve the target for 2030. Target-setting at the local level is based on the 2014 inventory (please see Chapter 1, Section 1.2.2.1, for discussion on the 2014 inventory and reduction targets). The CAP inventory is necessary to reflect existing conditions and to incorporate current data and best practices in estimating GHG emissions.

The CAP emission forecasts are based on growth projections adopted in the 2011 GPU, with the addition of GPAs approved since the 2011 GPU. Proposed GPAs are included in the cumulative analysis. Emissions were forecast for 2020, 2030 and 2050, consistent with state reduction targets and goals embodied in AB 32, SB 32, and EO S-3-05, respectively. Reduction targets specified in the CAP incorporate the latest guidance from CARB in its proposed 2017 Scoping Plan Update (see Chapter 1, Section 1.2.2.1). The 2014 inventory is shown in **Table 2.7-1**. Emission forecasts, GHG reductions targets and reductions from CAP measures are shown in **Table 2.7-2**.

CAP Impact Analysis

This CAP primarily focuses on reducing emissions by 2020 and 2030, consistent with legislatively-adopted state targets. While setting a GHG reduction goal beyond 2030 is important to provide long-term objectives, it would be speculative to demonstrate achievement of a goal for 2050 with the information known today. This is primarily due to the uncertainty around future technological advances and future changes in state and federal law beyond 2030. In addition, CARB's Scoping Plan is focused on meeting the 2030 reduction target, as directed in SB 32. Therefore, the County's CAP aligns with the state in setting a 2030 target.

After adoption, CAP GHG reduction measures and supporting efforts would be implemented and progress monitored periodically. The CAP is intended to be an adaptive management plan that is adjusted based on measure progress, technological innovations, and legislative changes. The CAP relies on GHG Reduction Measure T-4.1 related to direct investment projects to reduce GHG emissions to close the emissions gap after implementation of other local measures. The County will continue to assess the feasibility of this measure locally as the CAP is implemented.

However, in the long term, the quantifiable measures in the CAP fall short of meeting the County's 2050 reduction goal, despite new innovations and technologies that will likely become available over the coming decades to enable further GHG reductions. In addition, new methods may become available to quantify measures that are currently unquantifiable. Finally, new state and federal regulations may further reduce emissions in sectors currently addressed primarily by local County measures. As climate change science and policy continues to advance, the County will be able to apply new reductions toward meeting the long-term 2050 GHG emissions reduction goal in future CAP updates, as outlined in Chapter 5 of the CAP.

The CAP would reduce emissions by 2020 and 2030, consistent with legislatively-adopted State targets and would, therefore, not result in a significant impact. However, considering the need for future implementation actions to achieve the emissions reductions necessary to achieve the 2050 goal, the impacts from the CAP are conservatively considered to be **significant and unavoidable**. This is a new significant impact that was not identified in the 2011 GPU PEIR (**Impact GHG-1**).

Implementation of the CAP also has the potential to cause GHG emissions from implementation of GHG reduction measures and supporting efforts that would improve bicycle, pedestrian, EVCS, park-and-ride infrastructure; implement direct investment projects; result in the construction of small- and large-scale renewable energy systems including solar photovoltaic, concentrator solar, wind turbine and geothermal systems; expand solid waste facilities; and result in agricultural equipment retrofits, and a tree planting program that were not explicitly evaluated within the 2011 GPU PEIR, and were not previously relied upon for GHG reductions in the 2011 GPU PEIR evaluation. The 2012 Wind Energy Ordinance EIR (2012 Wind Energy EIR) evaluated impacts related to the development of small- and large-scale wind turbines and that analysis is summarized below and hereby incorporated by reference (County of San Diego 2012). Additionally, the Padre Dam Municipal Water District's Comprehensive Facilities Master Plan PEIR (2017 Padre Dam PEIR) evaluated impacts related to the development/expansion of water purification infrastructure and impacts that are associated with the Supporting Effort for the Water and Wastewater Category. The analysis from that document is summarized below and hereby incorporated by reference (Padre Dam MWD 2017).

The following section describes the potentially significant impacts related to GHG emissions that could result from the implementation of the CAP.

Bicycle, Pedestrian, EVCS, Park-and-Ride Improvements

The goal of GHG Reduction Measure T-2.1 and Supporting Efforts within the Built Environment and Transportation Category is to encourage a shift towards alternative modes of transportation and reduce single-occupancy vehicle trips. These measures would be implemented through pedestrian and bicycle safety improvements by the County; installation of EVCS; and construction of new and expansion of existing park-and-ride facilities. Locations for such improvements have not been identified; however, because of the nature of these improvements, these would most likely occur near residential and commercial centers throughout the unincorporated areas. GHG emissions from construction activities would result from use of heavy-duty equipment and vehicle travel including worker commute trips, vendor truck trips, and haul trips. Construction activities may include grading, clearing, and paving, but would not include construction of new buildings or structures. Operational emissions are primarily from mobile sources, but the improvements would involve activities to reduce vehicle use, reduce VMT, and increase alternative fuel use resulting in an overall reduction in county-wide GHG emissions. The emissions of GHGs associated with these measures would be **less than significant**.

Local Direct Investment Program

Implementation of GHG Reduction Measure T-4.1 would result in a variety of direct investment in local projects that would offset carbon emissions within the unincorporated county by 2030. A carbon offset project is created when a specific action is taken that reduces, avoids, or sequesters GHG emissions. The County will collaborate with the San Diego Air Pollution Control District (SDAPCD) to develop and implement a Direct Investment Program by establishing an independent registry or joining an existing registry, such as the California Air Pollution Control Officers Association (CAPCOA) Greenhouse Gas Reduction Exchange (GHG Rx). Direct investment projects would use protocols approved by the California Air Resources Board (CARB), such as those found in the CAPCOA GHG Rx, Climate Action Reserve, Verified Carbon Standard, and/or American Carbon Standard (see Appendix B).⁴

Projects implemented by Measure T-4.1 will be listed on a registry through the SDAPCD (such as CAPCOA GHG Rx) to track and ensure that the GHG emissions are real, permanent, quantifiable, verifiable, enforceable, and additional to offsets that are otherwise required.⁵ CEQA Guidelines Section 15126.4(c)(3) provides that off-site measures, including offsets that are not otherwise required, can be used to mitigate a project's GHG emissions. The carbon offsets achieved through implementation of Measure T-4.1 will be in addition to any GHG reductions achieved through other CAP GHG reduction measures or any GHG reductions already assumed through state GHG reduction actions or otherwise required by law, mandate, or condition of a permit. The County will not purchase carbon offset credits from a registry in the carbon offset market, but will use the registry to track carbon offsets achieved through County direct investment projects.

Carbon offset registries require projects to comply with approved protocols using rigorous, standardized review processes (see Appendix B). The registry requires that offset projects meet the following steps to receive credit as an offset project: 1) listing or registration of the project will only be accepted if it complies with the applicable protocol requirements; 2) once the GHG reduction project has begun, the registry will require the offset project developer to retain an independent, qualified, third-party to verify the reduction achieved by the project; 3) a verification report will be prepared by the third-party to ensure that the report complies with the applicable registry requirements; and 4) once the report is verified as complying with protocols and requirements the registry will issue the offsets. Carbon offsets are issued by the registry that is responsible for certifying that the emissions reductions have occurred. The registry will ensure that carbon offsets are retired in perpetuity.

⁴ Information about these CARB-approved registries, including information about process and protocols can be found at the following links and in Appendix B of this SEIR.

CAPCOA GHG Rx: <http://www.capcoa.org/ghg-rx/>

Climate Action Reserve: <http://www.climateactionreserve.org/>

Verified Carbon Standard: <http://www.v-c-s.org/>

American Carbon Registry: <http://americancarbonregistry.org/>

⁵ A definition of real, permanent, quantifiable, verifiable, enforceable, and additional can be found at Appendix B, Part 1, pages 56-64. The protocols provide substantial evidence of the effectiveness of strict environmental requirements of projects that wish to be listed on registries. The example cited in this footnote is contained in the CAPCOA GHG Rx Quality Criteria: Protocol for Case by Case GHG Emissions Reductions and Criteria for Evaluation of New Protocols.

The protocols contain rules and procedures governing the retirement or cancellation of carbon offsets. These protocols and processes ensure that offsets issued by offset registries satisfy the environmental integrity criteria established by the offset protocols. CARB recognizes the rigor of the voluntary accounting procedures adopted by approved registries (with protocols the County will use to implement Measure T-4.1) to ensure that GHG emissions are real, additional, and permanent.⁶ Carbon offsets achieved through implementation of GHG Reduction Measure T-4.1 must be complete and retired before the County can take reduction credits.

Appendix B of this Draft SEIR provides a range of protocols that may be applied to County direct investment projects to implement CAP GHG Reduction Measure T-4.1. There may be additional protocols necessary or desirable to implement CAP GHG Reduction Measure T-4.1 projects. The protocols contain rules and procedures governing the retirement or cancellation of carbon offsets. For example, the Urban Tree Planting Project Protocol contains rules for new tree planting projects so that new trees are planted in areas that have not been previously harvested, i.e., only planted trees and trees that regenerate from planted trees are eligible to be quantified (see Appendix B, Part 8, page 191). If the Urban Tree Planting Project Protocol is deployed for future direct investments, then those planted trees would have to be additional to any trees required under CAP GHG Reduction Measures A-2.1 and A-2.2.

The types of direct investment projects that could result from approved protocols could include but are not limited to: biomass conversion to energy or soil application (i.e., conversion of biomass waste to fuel for electricity generation or conversion of forestry and agricultural residues to soil compost) (this protocol is detailed in Appendix B, Part 1, starting on page 1), boiler efficiency upgrades (i.e., implementing retrofits to increase thermal efficiency in natural-gas fired boilers or process heaters) (this protocol is detailed in Appendix B, Part 1, starting on page 36), coastal wetlands creation (i.e., restoring degraded wetlands to recapture soil carbon stock) (this protocol is detailed in Appendix B, Part 1, starting on page 154), reforestation projects (i.e., planting of trees to recapture CO₂ sinks) (this protocol is detailed in Appendix B, Part 3, starting on pages 1 and pages 133), compost additions to rangeland (i.e., increasing soil carbon sequestration and improving quality of soils) (this protocol is detailed in Appendix B, Part 1, starting on page 339), organic waste digestion (i.e., diverting organic waste and/or wastewater to a biogas control system) (this protocol is detailed in Appendix B, Part 6, starting on page 142), livestock management (i.e., installing biogas control systems for manure management on dairy cattle and swine farms) (this protocol is detailed in Appendix B, Part 4, starting on page 212 and Part 5, starting on pages 1 and 101), urban forest and urban tree planting projects (i.e., tree planting, maintenance, and/or improved management activities to increase carbon storage through trees) (this protocol is detailed in Appendix B, Part 8, starting on pages 99 and 191), and winterization (i.e., energy efficiency upgrades to buildings) (this protocol is detailed in Appendix B, Part 9, starting on page 1). This list is not intended to be exhaustive, but represents some of the types of projects that could be considered in the future.

⁶ CARB, "Proposed Regulation to Implement the California Cap-and-Trade Program, Part I, Volume I: Initial Statement of Reasons" (October 28, 2010) at II-48.

By directly investing in projects within the County that would reduce emissions, the County would achieve GHG reductions and provide co-benefits from these projects. Direct investment projects will not only help address global climate change but they often also provide co-benefits such as reductions in criteria air pollutants, toxic air contaminants, energy demand, water consumption, health benefits, social benefits, and economic benefits. The CAP identifies that GHG Reduction Measure T-4.1 would account for 190,262 MTCO₂e of GHG emissions reductions based on the availability and feasibility of existing established offset protocols and their applicability to the County. Development of offset protocols is advancing each year with new science and technology. Additional protocols may be approved and developed by agencies such as CARB and SDAPCD through, for example, the CAPCOA GHG Rx Quality Criteria: Protocol for Case by Case GHG Emission Reductions and Criteria for Evaluation of New Protocols (see Appendix B, Part 1, starting on page 53) or adoption of a new protocol by a CARB-approved registry. These additional protocols could become available to the County in the near term and throughout CAP implementation. While the County has assumed a base level of reductions that could be achieved through direct investments, additional reduction potential is likely available currently and could be available in the future. This additional reduction potential could be used to achieve a greater amount of GHG emissions reductions if other GHG reduction measures are determined to be underperforming during the CAP monitoring and update process. Progress toward the 2030 target will be monitored over time, and through future CAP updates the level of local direct investments can be adjusted as needed to achieve the 2030 target reductions. During these future updates, the County will also reevaluate emissions reductions needed post-2030.

Projects that are implemented and/or funded through GHG Reduction Measure T-4.1 would likely occur throughout the unincorporated County, but the specific locations and the scale of projects are unknown. Consistent with the requirements of CEQA, this Draft SEIR evaluates GHG Reduction Measure T-4.1 at a program level and accounts for a broad range of types, sizes, and numbers of projects and activities described in established protocols (as listed above and in Appendix B). Most direct investment projects would involve some level of construction and physical disturbance of the land which would result in the production of GHG emissions. For example, some projects would involve retrofits/upgrades at existing facilities (e.g., boiler efficiency upgrades and biogas capture systems) and some would involve disturbance to undeveloped land and habitats (e.g., wetland creation and reforestation). Ultimately, each of the individual offset projects would result in a net reduction in GHG emissions and provide an overall net GHG benefit. Nonetheless, this analysis assumes that implementation of offset projects under GHG Reduction Measure T-4.1 would result in GHG emissions because of construction activities that may include: the use of heavy equipment for earthmoving, materials processing, or compost spreading; vehicle trips during construction/equipment replacement/monitoring activities; watering during implementation; possible changes in land form and views; and installation or upgrades of mechanical equipment or facilities.

Because the variety of projects that may be approved and ultimately undertaken by the County under the Local Direct Investment Program is not known, it is not possible to speculate upon the types of impacts that could occur and whether regulations or mitigation measures would be available to minimize potential environmental impacts.

However, all projects would be required to comply with applicable existing federal, state, and local regulations. Specifically, projects would be evaluated for their consistency with the 2011 GPU policies, 2011 GPU PEIR mitigation measures, County Grading Ordinance regulations, County Resources Protection Ordinance regulations, etc. Future discretionary projects may also be required to undergo additional CEQA analysis to evaluate project-specific impacts. If a determination is made that potentially significant impacts would result from implementation of direct investment projects through the Local Direct Investment Program, then all feasible mitigation would be required to be implemented in accordance with CEQA Guidelines Section 15126.4.

For purposes of full disclosure, this Draft SEIR acknowledges that GHG Reduction Measure T-4.1 could result in GHG emissions through a variety of activities. However, the purpose of the projects that would be selected for implementation under GHG Reduction Measure T-4.1 would result in a net reduction in GHG emissions. Therefore, this impact is concluded to be **less than significant**.

Ground- or Roof-Mounted Photovoltaic Solar, Small Wind Turbines, and other Building Retrofits

Implementation of GHG Reduction Measures E-1.1, E-2.1, E-2.2, E-2.3, and E-2.4 could result in energy efficiency retrofits on existing residential and non-residential structures, and County facilities, and could include rooftop or ground-mounted solar photovoltaic or small wind turbines, upgraded mechanical systems, and other similar improvements. Specific locations for projects have not been identified. Future discretionary projects would be required to be evaluated for project-specific impacts under CEQA at the time of application and project-specific mitigation would minimize or eliminate impacts from GHG emissions to the extent feasible in compliance with CEQA Guidelines Section 15126.4.

The installation of rooftop solar photovoltaic energy systems generally does not require substantial construction activities, such as earthmoving or operation of heavy-duty equipment. Rooftop solar photovoltaic energy panels also do not require substantial operational activities, only minor maintenance activities such as regular inspections, repairs, and removing debris as necessary. Due to the nature of the improvements, it is likely that retrofits would occur in areas of existing development, and new development would contain energy-efficient mechanical equipment. Under both scenarios, implementation of new mechanical equipment or new renewable energy equipment would generally occur in developed areas of the County, would be regulated by the County Zoning Ordinance Section 6952(b) and require a building permit upon demonstrating consistency with the zoning criteria. The 2012 Wind Energy EIR concluded on page 3.1.1-19 that the primary source of GHG emissions related to small-scale wind turbines is vehicle traffic during construction. Impacts related to this were concluded to be less than significant because of the brief construction period associated with these facilities. Further, these improvements would contribute to an overall reduction in County-wide GHG emissions. Therefore, GHG impacts associated with these measures would be **less than significant**.

Large-Scale Renewable Energy Infrastructure

Implementation of GHG Reduction Measure E-2.1 would result in the construction and operation of new large-scale renewable energy systems, including large-scale solar photovoltaic, concentrator solar, geothermal systems, and/or wind turbines to achieve the County's 90% renewable energy goal. Because the amount of demand generated by such a program and the mix of renewable energy types that would be constructed to satisfy demand is unknown, this Draft SEIR evaluates the potential for impacts at the program level. The potential for the construction of large-scale renewable energy infrastructure was not evaluated in the 2011 GPU PEIR but potential wind energy impacts were evaluated in the 2012 Wind Energy EIR and that analysis is provided below and is hereby incorporated by reference.

Large-scale renewable energy systems, specifically wind, geothermal, and solar energy, require large, undeveloped land that are productive for generating renewable energy. Specific locations are unknown; however, it is likely that suitable locations would be areas that are not highly urbanized because of the size, massing, coverage, and scale of this type of infrastructure which typically results in the need for large amounts of land unencumbered by buildings or shadowed by buildings or trees.

The large-scale production of energy from solar photovoltaic and concentrator solar systems generally includes a variety of infrastructure components such as arrays, substation site, battery storage facility, collection system, and overhead and underground transmission facilities. Large-scale wind turbines infrastructure generally includes wind turbines (300-500 feet tall at the blade tip), substation, meteorological towers, overhead and underground collector cable system, and overhead transmission lines. Large-scale renewable energy infrastructure is typically located in areas where there is little residential or commercial development.

GHG emissions from the development of large-scale renewable energy systems would result from construction activities which would include heavy-duty equipment operation, vendor vehicles, water trucks, watering for dust suppression, haul trips, worker commute vehicles, and stationary sources such as generators. Site clearing for these projects may also lead to a one-time loss in carbon sequestration from vegetation removal. Operation of large-scale renewable energy systems typically requires a nominal increase in number of fulltime employees. Emissions of concern from operational activities include GHG emissions from maintenance activities such as panel washing, equipment operation, water trucks, and worker commute trips generated from site monitoring, inspections, and repair activities throughout the life of the solar or wind farm, and stationary sources such as generators. Decommissioning activities would require disassembly of wind turbine generators, disassembly of solar facilities, demolition of any on-site buildings, removal of perimeter fencing, and restoration of the site. Decommissioning impacts include GHG emissions from equipment and vehicle exhaust emissions, which would be similar to those generated by construction activities.

All large renewable energy projects would be subject to discretionary review and required to obtain a Major Use Permit (MUP). As part of the County's discretionary review process

all large renewable energy projects would be evaluated under CEQA and would be required to implement mitigation measures to minimize all significant impacts to the extent feasible related to GHG emissions. The 2012 Wind Energy EIR concluded on page 3.1.1-21 that any temporary impacts related to construction of large-scale wind projects would be overshadowed by the overall net benefit of GHG emissions reduction during the operation of wind turbines. Similarly, temporary impacts related to construction of large solar projects would benefit from overall net benefit of GHG emissions reductions. In addition, many solar energy systems include battery storage to store and send power to the grid during off-peak hours to avoid the need for additional non-renewable natural gas or coal-fired Peaker plants.

Therefore, large-scale renewable energy systems would be required to undergo the County's discretionary review process and mitigate significant impacts to the extent feasible. The operation of the systems would generate renewably sourced energy which would be added to the power grid, and would therefore represent a net GHG emissions reduction compared to fossil fuel-based energy production. The operation of the renewable infrastructure would reduce GHGs over the lifespan of the projects and would result in a net reduction of GHG emissions every year until decommissioning. GHG emissions reduced over the life of these facilities would more than compensate for any temporary increases in emissions from construction, vegetation removal, or decommissioning activities. Therefore, emissions of GHGs associated with these measures would be **less than significant**.

Diversion of Solid Waste

Implementation of GHG Reduction Measure SW-1.1 would increase diversion of solid waste from the unincorporated areas. One of the goals of the CAP is to achieve 75% diversion by 2030. These measures could result in construction of new, and expansion of existing organics processing facilities throughout the County.

Organics processing begins with delivery of organic waste to a processing facility, which undergoes several pre-treatment steps. Materials are screened for contaminants, often chopped or shredded to smaller sizes for faster decomposition, and may be blended with other organic streams or bulking agents for ideal processing conditions. These facilities use mechanical handling techniques such as physical turning, windrowing, or aeration. Organics processing uses waste from forest management, landscaping, agricultural processing, crop harvesting, food consumption, and emergency animal mortalities. These processing activities can be conducted outdoors or in partially or fully enclosed facilities.

Different types of organics processing include windrow composting, aerated static pile (ASP) composting, enclosed ASP composting, or fully enclosed composting. Windrow composting involves spreading organic materials into long, semi-circle shaped piles which are mechanically turned by heavy equipment to maintain even decomposition. Piles generally range from 4 to 8 feet in height and 14 to 16 feet in length. Windrow composting requires large amounts of land. ASP composting involves pushing or pulling air through the organic materials pile. Enclosed ASPs consist of covered piles, often by heavy duty plastic bags or tarps, where a negative air system pulls air through the pile and then

through a biofilter. Fully enclosed composting facilities digest organic matter in a closed pressure vessel.

GHG emissions from these facilities would occur from construction activities including operation of heavy-duty equipment and vehicle travel by worker commute trips, material delivery, and haul trips. Construction activities would primarily consist of grading and clearing land and construction of small structures. The anaerobic decomposition of the waste result in the emissions of methane; however, the diversion of waste from landfills to organics processing facilities would reduce emissions from decomposition of organic waste in landfills. Generators used for aeration and powering water pumps generate GHG emissions, but the emissions are typically minimal. The anticipated hauler truck trips to the organics processing facilities would displace existing trucks trips for delivering the organics to landfills. Therefore, these measures would not be anticipated to lead to a net increase in truck trips in the region. Similarly, increased construction and demolition waste recycling and collection of commercial food scraps and household hazardous waste is expected to displace trips already occurring to transport this waste to landfills. The emissions of GHGs associated with these measures would be **less than significant**.

Padre Dam Water and Wastewater Supporting Effort

As described in Chapter 1, Project Description, the CAP includes a Water and Wastewater Supporting Effort, that would support participation in the Padre Dam AWP project. The Padre Dam MWD prepared Padre Dam PEIR and that analysis is hereby incorporated by reference. As described on pages 4.7-10 through 4.3-15 of the Padre Dam PEIR, less-than-significant impacts were identified for GHG emissions. Therefore, the impacts related to GHG emissions because of the Padre Dam AWP would be **less-than significant**.

Agricultural Improvements

Implementation of GHG Reduction Measures A-1.1, A-1.2, A-2.1, and A-2.2 would support conversion of agricultural equipment to alternative fuels and increase carbon sequestration by increasing tree canopy coverage in the County. These measures could lead to temporary increases in GHG emissions because of fuel consumption for distribution of trees, water consumption during tree establishment, and minor emissions from replacement of pumps. These increases would be finite and temporary, and would be offset by GHG reductions achieved once the measures are implemented. The emissions of GHG associated with these measures would be **less than significant**.

Cumulative Impacts

As described above, the issue of global climate change is inherently a cumulative issue, as the GHG emissions of individual projects cannot be shown to have any material effect on global climate. Impacts would be cumulative in nature if they lead to a substantial increase in GHG emissions, when combined with other development allowed under the 2011 GPU. The goal of the CAP is to reduce GHG emissions in the county consistent

with state legislation. Emission forecasts in the CAP are based on growth projections in the adopted 2011 GPU and GPAs approved since adoption of the 2011 GPU.

There are several GPAs, both County-initiated and proposed by project applicants, that are currently under review by the County that would increase density or intensity above the 2011 GPU. These GPAs are not included in the CAP emission inventory or forecasts as they are not part of the adopted growth projections that are based on General Plan buildout, but may contribute to an increase in GHG emissions beyond current CAP emissions forecasts, if approved. These GPAs would increase emissions beyond those forecasted in the CAP and are not accounted for in the CAP. While any proposed or new GPAs would need to demonstrate compliance with the CAP, if adopted, because increased emissions that could occur from the changed land uses proposed under the GPAs are not accounted for in the CAP, they could result in a substantial increase in county-wide GHG emissions and would have a considerable contribution such that a new significant cumulative 2030 GHG impact would occur. Therefore, the project's GHG impacts, in combination with increased GHG emissions from reasonably foreseeable GPA projects, would have a **considerable contribution** such that a new significant cumulative 2030 GHG impact would occur (**Impact GHG-2**).

Impact Summary

Implementation of the GHG reduction measures and supporting efforts that would result in bicycle, pedestrian, EVCS, and park-and-ride improvements, small and large-scale renewable energy systems, solid waste diversion and agricultural improvements would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. Therefore, the CAP's GHG impacts would be **less than significant**.

The project's GHG impacts, in combination with increased GHG emissions from reasonably foreseeable GPA projects, would have a **considerable contribution** such that a new significant cumulative 2030 GHG impact would occur

2.7.4.2 Issue 2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs

This section describes potential project and cumulative impacts resulting from conflicts with applicable plans, policies, or regulations adopted for the purpose of reducing emission of GHGs.

Guidelines for Determination of Significance

Based on Appendix G of the CEQA Guidelines, the project would have a significant impact if it would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Impact Analysis

2011 GPU PEIR Determination

The 2011 GPU PEIR evaluated impacts from the adoption of the goals and policies of the 2011 GPU countywide, including the project area. In addition, the 2011 GPU PEIR evaluated buildout of the land use designations applied throughout the unincorporated area.

The 2011 GPU PEIR determined that buildout under the 2011 GPU would result in potentially significant impacts related to consistency with GHG plans. The discussion of impacts can be found in Chapter 2.17 Global Climate Change, pages 2.17-12 through 2.17-22 and is hereby incorporated by reference. The 2011 GPU 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 2011 GPU goals and policies; and, specific mitigation measures/implementation programs identified in the 2011 GPU PEIR. Specific policies and mitigation measures related to GHG emissions are listed above under Section 2.7.2, Regulatory Framework. As described above, the CAP updates and implements Policy COS-20.1 of the 2011 GPU and mitigation measures CC-1.2, CC-1.7, and CC-1.8 of the 2011 GPU PEIR. The environmental impacts of these updates are evaluated throughout the Draft SEIR.

CAP Impact Analysis

Implementation of the CAP could result in potentially significant impacts related to conflicts with a plan, policy, or regulation adopted for the purpose of reducing GHG emissions because of implementation of the GHG reduction measures and supporting efforts that would improve alternative transportation infrastructure, construct large-scale renewable energy generation systems, construct new or expanded solid waste facilities, implement agricultural improvements. These measures and actions were not specifically evaluated within the 2011 GPU PEIR. The 2012 Wind Energy EIR evaluated impacts specifically related to the development of small and large-scale wind turbines and that analysis is summarized below and is hereby incorporated by reference where appropriate (San Diego County 2012).

The CAP includes GHG reduction measures and supporting efforts to reduce emissions in line with state targets. The land use projections that form the basis of CAP emissions projections are consistent with SANDAG's projections used in the RTP/SCS. The CAP updates and implements Policy COS-20.1 of the 2011 GPU and mitigation measures CC-1.2, CC-1.7, and CC-1.8 of the 2011 GPU PEIR. Given that the inherent goal of the CAP is to reduce GHG emissions, it would not conflict with regional and local plans to reduce GHG emissions in the long term. Impacts related to short-term emissions are discussed in the following sections.

The following section describes the potentially significant impacts related to potential conflicts with plans, policies, or regulations adopted to reduce or avoid GHG emissions from the implementation of these measures. Impacts would primarily be related to short-

term construction activities. Construction equipment may include smaller power tools, heavy-duty loaders, dozers or trucks, depending upon the size and scale of the improvement. The exact location, duration, and intensity of use of construction equipment is unknown, therefore, these impacts are addressed qualitatively at a programmatic level. As part of the County's discretionary review process, applicable projects would be evaluated under CEQA and would be required to implement mitigation measures to minimize all significant impacts to the extent feasible related to GHG emissions. The measures are ultimately intended to reduce long-term GHG emissions consistent with CAP reduction targets.

Bicycle, Pedestrian, EVCS, Park-and-Ride Improvements

As described under Section 2.7.4.1 above, the goal of GHG Reduction Measure T-2.1 and Supporting Efforts within the Built Environment and Transportation Category is to encourage a shift towards alternative modes of transportation and reduce single-occupancy vehicle trips. These measures include improvements to bicycle and pedestrian facilities, installation of EVCS, and development of park-and-ride facilities. These measures could lead to a short-term increase in GHG emissions associated with construction activities; however, their long-term effect would be to reduce vehicle miles traveled and GHG emissions in the County. The measures would be consistent with the County's overall goal to reduce GHG emissions consistent with state goals. Therefore, these measures would not have the potential to conflict with or obstruct implementation of an applicable plan, policy, or regulation adopted to reduce the emissions of GHGs. Impacts would be **less than significant**.

Ground or Roof-Mounted Photovoltaic Solar, Small Wind Turbines, and other Building Retrofits

Implementation of GHG Reduction Measures E-1.1, E-2.1, E-2.2, E-2.3, and E-2.4 could result in energy efficiency retrofits on existing residential and non-residential structures, including rooftop or ground-mounted solar photovoltaic or small wind turbines, upgraded mechanical systems, and other similar improvements on new construction.

As described under Section 2.7.4.1 above, installation and operation of small-scale solar photovoltaic or small wind turbines, and implementation of building retrofits would lead to a reduction in GHG emissions in the County. The measures would be consistent with the County's overall goal to reduce GHG emissions consistent with state goals. Therefore, implementation of these measures would not have the potential to conflict with or obstruct implementation of an applicable plan, policy, or regulation adopted to reduce the emissions of GHGs. Impacts would be **less than significant**.

Local Direct Investment Program

As described in detail above in Section 2.7.4.1, implementation of GHG Reduction Measure T-4.1 would require the County to implement and/or fund a variety of direct investment projects through a Local Direct Investment Program. GHG Reduction Measure T-4.1 would account for ~~195,514~~ 190,262 MTCO_{2e} of GHG emissions

reductions based on the availability and feasibility of existing established offset protocols and their applicability to the County. Progress toward the 2030 target will be monitored over time, and through future CAP updates the level of local direct investments can be adjusted as needed to achieve the 2030 target reductions. During these future updates, the County will also reevaluate off sets needed post-2030.

Because the variety of projects that may be approved and ultimately undertaken by the County under the Local Direct Investment Program is not known, it is not possible to speculate upon the types of impacts that could occur and whether regulations or mitigation measures would be available to minimize potential environmental impacts. However, all projects would be required to comply with applicable existing federal, state, and local regulations. Specifically, projects would be evaluated for their consistency with the 2011 GPU policies, 2011 GPU PEIR mitigation measures, County Grading Ordinance regulations, County Resources Protection Ordinance regulations, etc. Future discretionary projects may also be required to undergo additional CEQA analysis to evaluate project-specific impacts. If a determination is made that potentially significant impacts would result from implementation of direct investment projects through the Local Direct Investment Program, then all feasible mitigation would be required to be implemented in accordance with CEQA Guidelines Section 15126.4.

For purposes of full disclosure, this Draft SEIR acknowledges that GHG Reduction Measure T-4.1 could result in GHG emissions through a variety of activities. However, the purpose of the projects that would be selected for implementation under GHG Reduction Measure T-4.1 would result in a net reduction in GHG emissions. Therefore, implementation of this measure would not conflict with any applicable plan, policy, or regulation adopted for the purpose of mitigating GHG emissions impacts and this impact is concluded to be **less than significant**.

Large-Scale Renewable Energy Infrastructure

Implementation of GHG Reduction Measure E-2.1 could result in the development of new large-scale renewable energy systems because of increased demands related to the implementation of a renewable energy program. As described under Section 2.7.4.1, construction activities associated with these facilities could temporarily increase GHG emissions from heavy-duty equipment, vendor vehicles, haul trips, worker commute vehicles, and stationary sources such as generators. Operation of solar facilities and wind turbine projects typically requires a nominal increase of number of fulltime employees. Emissions from operational activities would occur from maintenance activities such as panel washing equipment operation, water trucks, and worker commute vehicles generated from site monitoring, inspections, and repair activities throughout the life of the solar or wind facility, and stationary sources such as generators. Decommissioning activities would require disassembly of wind turbine generators, disassembly of solar facilities, demolition of any on-site buildings, removal of perimeter fencing, and restoration of the site. Emissions from decommissioning activities would be similar to those generated by construction activities.

As described previously, large-scale renewable energy systems would generate renewably sourced energy which would be added to the power grid, therefore, representing a net GHG emissions reduction over the lifetime of the facility as compared to fossil fuel-based energy production. Therefore, implementation of GHG Reduction Measure E-2.1 would be consistent with the County's overall goal to reduce GHG emissions consistent with state goals and would not have the potential to conflict with or obstruct implementation of an applicable plan, policy, or regulation adopted to reduce the emissions of GHGs. Impacts would be **less than significant**.

Diversion of Solid Waste

As described in Section 2.7.4.1, implementation of GHG Reduction Measure SW-1.1, would increase diversion of solid waste from the unincorporated areas. This measure could result in construction of new, and expansion of existing solid waste facilities throughout the unincorporated areas. Emissions from construction activities would be finite and temporary and would lead to long-term GHG reductions realized from increased diversion of solid waste from landfills. While hauler truck trips would be generated because of increased organic waste pickup, C&D waste recycling, commercial waste and HHW pickup, these truck trips would displace trips already occurring to transport this waste to landfills. The measures would be consistent with the County's overall goal to reduce GHG emissions consistent with the County's Strategic Waste Plan and state goals. Therefore, the measure would not have the potential to conflict with or obstruct implementation of an applicable plan, policy, or regulation adopted to reduce the emissions of GHGs. Impacts would be **less than significant**.

Padre Dam Water and Wastewater Supporting Effort

As described in Chapter 1, Project Description, the CAP includes a Water and Wastewater Supporting Effort, that would support participation in the Padre Dam Advanced Water Purification (AWP) project. The Padre Dam MWD prepared the Padre Dam PEIR and that analysis is hereby incorporated by reference. As described on page 4.7-16 of the Padre Dam PEIR, less than significant impacts were identified related to consistency with GHG plans, policies, and regulations. Therefore, impacts related to consistency with GHG plans, policies, and regulations because of the Padre Dam AWP would be **less than significant**.

Agricultural Improvements

Implementation of GHG Reduction Measures A-1.1, A-1.2, A-2.1, and A-2.2 would support conversion of agricultural equipment to alternative fuels and increase carbon sequestration by increasing tree canopy coverage in the county. As described under Section 2.7.4.1, these measures may lead to a temporary increase in emissions but would lead to long-term GHG reductions in line with CAP targets. The measures would be consistent with the County's overall goal to reduce GHG emissions consistent with state goals. Therefore, the measures would not have the potential to conflict with or obstruct implementation of an applicable plan, policy, or regulation adopted to reduce the emissions of GHGs. Impacts would be **less than significant**.

Cumulative Impacts

As described above, the issue of global climate change is inherently a cumulative issue, as the GHG emissions of individual projects cannot be shown to have any material effect on global climate. Impacts would be cumulative in nature if they may conflict with an applicable plan, policy or regulation adopted to reduce GHG emissions, when combined with other development allowed under the 2011 GPU. The goal of the CAP is to reduce GHG emissions in the County consistent with state legislation. Emission forecasts in the CAP are based on growth projections in the adopted 2011 GPU and GPAs approved prior to the project Notice of Preparation date (October 20, 2016) of this Draft SEIR.

There are several GPAs, both County-initiated and proposed by project applicants, that are currently under review by the County that would increase density or intensity above the 2011 GPU. These GPAs are not included in the CAP emission inventory or forecasts as they are not part of the adopted growth projections, but may contribute to an increase in GHG emissions beyond current CAP emissions forecasts that are based on General Plan buildout, if approved. These GPAs would increase emissions beyond those forecasted in the CAP and are not accounted for in the CAP. While any proposed or new GPAs would need to demonstrate compliance with the CAP, if adopted, because increased emissions that could occur from the changed land uses proposed under the GPAs are not accounted for in the CAP, they could result in a substantial increase in county-wide GHG emissions and would have a considerable contribution such that a new significant cumulative 2030 GHG impact would occur. Therefore, the project's GHG impacts, in combination with increased GHG emissions from reasonably foreseeable GPA projects, would have a **considerable contribution** such that a new significant cumulative impact would occur related to the potential to conflict with or obstruct implementation of an applicable plan, policy, or regulation adopted to reduce the emissions of GHGs (**Impact GHG-3**).

Impact Summary

Implementation of the GHG reduction measures and supporting efforts that would result in alternative transportation improvements, small and large-scale renewable energy systems, solid waste diversion and agricultural improvements would not conflict with an applicable plan, policy, or regulation adopted to reduce the emissions of GHGs. Therefore, the impact would be **less than significant**.

The project's GHG impacts, in combination with increased GHG emissions from reasonably foreseeable GPA projects, **would have a considerable contribution** such that a new significant cumulative impact would occur related to the potential to conflict with or obstruct implementation of an applicable plan, policy, or regulation adopted to reduce the emissions of GHGs.

2.7.5 Mitigation

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

As described in Section 2.7.4.1, the project would not generate a substantial amount of GHG emissions that may have a significant impact. However, GHG impacts from the CAP would be significant because of the need for future implementation actions to achieve the long-term 2050 goal. As described under Impact GHG-1, it would be speculative to demonstrate achievement of a goal for 2050 with the information known today. As climate change science and policy continues to advance, the County will be able to apply new reductions toward meeting the long-term 2050 GHG emissions reduction goal in future CAP updates, as outlined in Chapter 5 of the CAP. There are no additional feasible mitigation measures available to mitigate this impact based on information currently known. Therefore, this impact would be **significant and unavoidable**.

In addition, emissions from reasonably foreseeable cumulative projects (i.e., in-process GPAs) and GPAs submitted for processing to the County in the future if approved, would increase forecasted emissions in the County and may impede attainment of CAP GHG reduction targets.

In accordance with CEQA Guidelines Section 15126.4(c) and related guidance, the County has determined that proposed GPAs shall provide for all feasible on-site design features/mitigation measures (additional to requirements of new development in the CAP Consistency Review Checklist), in addition to off-site GHG mitigation (such as the purchase of carbon offset credits) under the circumstances discussed below, to reduce impacts from GHG emissions from in-process and future GPAs to a less-than-significant level. As such, CAP Mitigation Measure M-GHG-1 (listed below) requires GPAs that increase density or intensity above the 2011 GPU to offset additional (Option 1) or all (Option 2) GHG emissions for a 30-year period.⁷ The approach for evaluating GPA consistency with the CAP is in **Table 2.7-3** and described below.

CARB recommends that “lead agencies prioritize on-site design features and direct investments in GHG reductions in the vicinity of the project” (CARB 2017a). CARB also recognizes that “[w]here further design or regional investments are infeasible or not proved to be effective, it may be appropriate and feasible to mitigate project emissions through purchasing and retiring carbon credits issued by a recognized and reputable accredited carbon registry” (CARB 2017a). Examples of off-site mitigation include, among other mechanisms, the purchase of verifiable carbon “offsets” from a reputable carbon registry that will undertake mitigation. The use of carbon offsets to mitigate GHG emissions is expressly authorized by CEQA Guidelines section 15126.4(c)(3).

One carbon offset credit represents the past reduction or sequestration of one metric ton of carbon dioxide equivalent that is “not otherwise required” (CEQA Guidelines section

⁷ A “project life” is 30 years. This methodology is consistent with the 30-year project life time frame used by the South Coast Air Quality Management District’s GHG guidance (SCAQMD 2008).

15126.4(c)(3)). Carbon offsets that reduce the net increase of GHG emissions shall achieve real, permanent, quantifiable, verifiable, and enforceable reductions (Cal. Health & Saf. Code section 38562(d)(1)).

The approach for evaluating GPA consistency with the CAP is provided in **Table 2.7-3**. The County shall implement the following mitigation measure to reduce significant cumulative GHG impacts and to ensure that the County can achieve its reduction targets as part of the CAP:

CAP Mitigation Measure M-GHG-1: The County shall require in-process and future GPAs to reduce their emissions to ensure that CAP emission forecasts are not substantially altered such that attainment of GHG reduction targets could not be achieved. Project applicants for in-process and future GPAs could accomplish this through two options, as outlined below:

Option 1 (No Net Increase): GPA project applicants shall achieve no net increase in GHG emissions from additional density above the 2011 GPU. Applicants shall be required in their respective CEQA documents to quantify the GHG emissions from their projects that exceed the GHG emissions for the 2011 GPU density or intensity forming the basis of the CAP emission forecasts (i.e., projections). This increase in emissions shall be reduced through on-site design features and mitigation measures and off-site mitigation, including purchase of carbon offset credits by the applicant. Applicants shall demonstrate compliance with relevant CAP measures as identified in the “CAP Consistency Review Checklist” in addition to all feasible on-site design features and mitigation measures. Off-site mitigation, including purchase of carbon offset credits, would be allowed after all feasible on-site design features and mitigation measures have been incorporated.

For example, if 400 residential units were allowed under the 2011 GPU and a GPA proposes 500 residential units, the emissions for the additional 100 units would be calculated and offset through compliance with the CAP Consistency Review Checklist and additional feasible on-site measures and off-site measures, including the use of carbon offsets. The emissions associated with the allowable density of 400 units would be mitigated through compliance with the CAP Consistency Review Checklist.

The County will consider, to the satisfaction of the Director of Planning & Development Services (PDS), the following geographic priorities for GHG reduction features, and GHG reduction projects and programs: 1) project design features/on-site reduction measures; 2) off-site within the unincorporated areas of the County of San Diego; 3) off-site within the County of San Diego; 4) off-site within the State of California; 5) off-site within the United States; and 6) off-site internationally.

Geographic priorities would focus first on local reduction features (including projects and programs that would reduce GHG emissions) to ensure that reduction efforts achieved locally would provide co-benefits. Depending on the carbon offset project

credit utilized, co-benefits may include reductions in criteria air pollutants, toxic air contaminants, energy demand, water consumption, health benefits, social benefits, and economic benefits. The GPA applicant or its designee shall first pursue offset projects and programs locally within unincorporated areas of the County of San Diego to the extent such ~~direct investment projects and programs~~ carbon offset credits are available and are financially feasible, as reasonably determined by the Director of PDS.

If carbon offset credits are provided as mitigation, the GPA applicant, or its designee, shall purchase and retire carbon offsets in a quantity sufficient to offset the net increase from GHG emissions above the density or intensity allowed in the 2011 GPU. This includes all GHG emissions from construction (including sequestration loss from vegetation removal) and operations.

For the net increase of construction and operations GHG emissions, prior to County's issuance of the project's first grading permit (for construction GHG emissions) or first building permit (for operations GHG emissions) the GPA applicant, or its designee, shall provide evidence to the satisfaction of the Director PDS that the project applicant or its designee has purchased and retired carbon offsets credits in a quantity sufficient to offset the net increase of construction and operations GHG emissions generated by the project. Operations emissions may be offset in phases, commensurate with the overall phasing of the project.

Carbon offset credits must be purchased through any of the following: (i) a CARB-approved registry, such as the Climate Action Reserve, the American Carbon Registry, and the Verified Carbon Standard, (ii) any registry approved by CARB to act as a registry under the state's cap-and-trade program, (iii) through the CAPCOA GHG Rx and the SDAPCD, or (iv) if no registry is in existence as identified in options (i), (ii), or (iii), above, then any other reputable registry or entity that issues carbon offsets consistent with Cal. Health & Saf. Code section 38562(d)(1)), to the satisfaction of the Director of PDS.

Option 2 (Net Zero): GPA project applicants shall reduce all project GHG emissions to zero to achieve no net increase over baseline conditions (carbon neutrality). Project emissions shall be reduced to zero through on-site design features and mitigation measures and off-site mitigation, including purchase of carbon offset credits by the applicant or its designee. Applicants shall demonstrate compliance with relevant CAP measures as identified in the "CAP Consistency Review Checklist" before considering additional feasible on-site design features and mitigation measures. Off-site mitigation, including purchase of carbon offset credits, would be allowed after all feasible on-site design features and mitigation measures have been incorporated.

The County will consider, to the satisfaction of the Director of Planning & Development Services (PDS), the following geographic priorities for GHG reduction features, and GHG reduction projects and programs: 1) project design features/on-site reduction measures; 2) off-site within the unincorporated areas of

the County of San Diego; 3) off-site within the County of San Diego; 4) off-site within the State of California; 5) off-site within the United States; and 6) off-site internationally.

Geographic priorities would focus first on local reduction features (including projects and programs that would reduce GHG emissions) to ensure that reduction efforts achieved locally would provide co-benefits. Depending on the ~~direct investment project~~ carbon offset credit utilized, co-benefits may include reductions in criteria air pollutants, toxic air contaminants, energy demand, water consumption, health benefits, social benefits, and economic benefits. The GPA applicant or its designee shall first pursue offset projects and programs locally within unincorporated areas of the County of San Diego to the extent such ~~direct investment projects and programs~~ carbon offset credits are available and are financially feasible, as reasonably determined by the Director of PDS.

If carbon offset credits are provided as mitigation, the GPA applicant, or its designee, shall purchase and retire carbon offsets in a quantity sufficient to offset all GHG emissions from the project. This includes all GHG emissions from construction (including sequestration loss from vegetation removal) and operations.

Prior to the County's issuance of the project's first grading permit (for construction GHG emissions) or first building permit (for operations GHG emissions) the GPA applicant, or its designee, shall provide evidence to the satisfaction of the Director of PDS that the project applicant or its designee has purchased and retired carbon offsets credits in a quantity sufficient to offset all construction and operations GHG emissions generated by the project. Operations emissions may be offset in phases, commensurate with the overall phasing of the project.

Carbon offset credits must be purchased through any of the following: (i) a CARB-approved registry, such as the Climate Action Reserve, the American Carbon Registry, and the Verified Carbon Standard, (ii) any registry approved by CARB to act as a registry under the state's cap-and-trade program, (iii) through the CAPCOA GHG Rx and the San Diego County Air Pollution Control District (APCD), or (iv) if no registry is in existence as identified in options (i), (ii), or (iii), above, then any other reputable registry or entity that issues carbon offsets consistent with Cal. Health & Saf. Code section 38562(d)(1)), to the satisfaction of the Director of PDS.

With implementation of the above mitigation measure, the incremental increase in GHG emissions from in-process or future GPAs would be offset such that CAP emission forecasts would not be affected. Impacts would be reduced to a **less than considerable level**.

2.7.5.2 Issue 2: Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs

As described in Section 2.7.4.2, the project would not conflict with an applicable plan, policy, or regulation adopted for reducing the emissions of GHGs. However, emissions from reasonably foreseeable cumulative projects, i.e., in-process GPAs if approved, or

future GPAs would increase forecasted emissions in the County and may impede attainment of CAP GHG reduction targets. The County shall implement **CAP Mitigation Measure M-GHG-1** to reduce cumulative impacts.

In addition, SB 375 addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 required CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035. SANDAG is responsible for preparing an SCS within their RTP. The goal of the SCS is to establish a forecasted development pattern for the region that, after considering transportation measures and policies, will achieve, if feasible, the 2020 and 2035 GHG reduction targets set by CARB under SB 375.

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

The CAP and CAP Consistency Checklist would require in-process and future GPAs to include site design elements and project design features developed to support the policy objectives of the RTP and SB 375. CAP GHG Reduction Measure T-2.1 would implement traffic calming measures, including pedestrian and cyclist comfort and safety features. CAP GHG Reduction Measure T-2.2 would require an amendment to the San Diego County Code of Regulatory Ordinances by 2020 to include a Transportation Demand Management (TDM) Ordinance for private employers. The resulting TDM programs for in-process or future GPAs would work to reduce VMT through land use and design measures that promote: alternative mode choice (e.g., land use diversity and pedestrian/bicycle networks); commute/travel services for residents to reduce out-going single occupant vehicle trips (e.g., shuttle services); and commute services for employees (if applicable) that would reduce incoming single occupant vehicle trips (e.g., transit fare subsidies for employees). Additional supporting efforts for the built environment and transportation category as identified in Chapter 3 of the CAP would also encourage efforts to support the goals and policies of SB 375 and the RTP/SCS.

Furthermore, the CAP Mitigation Measure M-GHG-1, described above, would be required of every in-process or future GPA that proposes density or intensity above that identified in the 2011 GPU. Implementation of CAP Mitigation Measure M-GHG-1 would ensure that in-process and future GPAs achieve either no net increase in GHG emissions or net zero GHG emissions to comply with the CAP.

The County shall implement **CAP Mitigation Measure M-GHG-1** to reduce cumulative impacts from reasonably foreseeable cumulative projects (i.e., in-process GPAs) and future GPAs. With the implementation of CAP Mitigation Measure M-GHG-1 above, impacts would be reduced to a **less than considerable level**.

Table 2.7-1 County Greenhouse Emissions by Category (2014)

Emissions Category	Emissions (MTCO ₂ e)	(%)
On-Road Vehicles	2,257,493	57
Electricity Use	723,165	18
Solid Waste	301,481	8
Natural Gas	282,678	7
Agriculture	165,078	4
Water	134,271	3
Off-Road Vehicles	36,927	1
Wastewater	21,181	1
Propane Use	9,910	<1
Total	3,932,184	100
Notes: Columns may not add to totals due to rounding.		
MTCO ₂ e = metric tons of carbon dioxide equivalents		
Source: Data modeled by Ascent Environmental in 2017.		

Table 2.7-1 County Greenhouse Emissions by Category (2014)

Emissions Category	Emissions (MTCO ₂ e)	(%)
On-Road Vehicles	<u>1,456,060</u>	<u>45</u>
Electricity Use	<u>760,638</u>	<u>24</u>
Solid Waste	<u>338,107</u>	<u>11</u>
Natural Gas	<u>290,712</u>	<u>9</u>
Agriculture	<u>163,696</u>	<u>5</u>
Water	<u>134,269</u>	<u>4</u>
Off-Road Transportation	<u>36,927</u>	<u>1</u>
Wastewater	<u>21,183</u>	<u>1</u>
Propane Use	<u>9,914</u>	<u><1</u>
Total	<u>3,211,505</u>	<u>100</u>
Notes: Columns may not add to totals due to rounding.		
MTCO ₂ e = metric tons of carbon dioxide equivalents		
Source: Data modeled by Ascent Environmental in 2017.		

Table 2.7-2 County Emissions Forecasts, Reduction Targets and CAP Reductions (MTCO₂e/year)

Emissions Source	2020	2030	2050
County Emissions Forecasts	3,796,648	3,230,807	3,398,802
Reductions from CAP Measures	226,215	871,497	1,124,472
County Emissions with CAP Measures	3,570,433	2,359,310	2,274,330
County GHG Reduction Targets (% below 2014)	-2%	-40%	-77%
Maximum Emissions allowed with Targets	3,853,540	2,359,310	904,402
Additional GHG Reductions Needed to meet Targets	-283,108 ^a	0	1,369,928
<p>Notes: Columns may not add to totals due to rounding.</p> <p>^aNegative values represent that the reductions meet and exceed the targets.</p> <p>% =</p> <p>CAP = Climate Action Plan</p> <p>GHG = greenhouse gas emissions</p> <p>MTCO₂e = metric tons of carbon dioxide equivalents</p> <p>Source: Data modeled by Ascent Environmental in 2017.</p>			

Table 2.7-2 County Emissions Forecasts, Reduction Targets, and CAP Reductions (MTCO₂e/year)

Emissions Source	2020	2030	2050
Projected Emissions without Legislative Reductions (BAU)	3,407,168	3,723,596	4,220,560
Reductions from State Legislative Actions	388,498	899,547	1,229,053
Legislative-Adjusted County Emissions	3,018,671	2,824,049	2,991,507
Reductions from GHG Reduction Measures	132,205	897,145	889,714
County Emissions with CAP (Percent below 2014)	2,886,465 (10%)	1,926,903 (40%)	2,101,793 (35%)
County Target Emissions (Percent below 2014)	3,147,275 (2%)	1,926,903 (40%)	738,646 (77%)
Additional GHG Reductions Needed to Meet Targets	0	0	1,363,147
<p>Notes: Columns may not add to totals due to rounding.</p> <p>BAU = Business-As-Usual</p> <p>CAP = Climate Action Plan</p> <p>GHG = greenhouse gas emissions</p> <p>MTCO₂e = metric tons of carbon dioxide equivalents</p> <p>Source: Data modeled by Ascent Environmental in 2017.</p>			

Table 2.7-3 Approach for Evaluating GPA Consistency with CAP

	New GPAs No Net Increase	New GPAs Net Zero	In-Process GPAs No Net Increase	In-Process GPAs Net Zero
Project submittal date	For projects submitted Post-CAP NOP (October 2016)	For projects submitted Post-CAP NOP (October 2016)	For projects submitted Pre-CAP NOP (October 2016)	For projects submitted Pre-CAP NOP (October 2016)
For density/ intensity allowed under the General Plan	Requirement: <ul style="list-style-type: none"> Comply with relevant CAP measures identified in the CAP Consistency Review Checklist 	Requirement: <ul style="list-style-type: none"> Comply with relevant CAP measures identified in the CAP Consistency Review Checklist; Implement all feasible on-site design features and mitigation measures as proposed by the project (project specific determination); and 	Requirement: <ul style="list-style-type: none"> Comply with relevant CAP measures identified in the CAP Consistency Review Checklist 	Requirement: <ul style="list-style-type: none"> Comply with relevant CAP measures identified in the CAP Consistency Review Checklist; Implement all feasible on-site design features and mitigation measures as proposed by the project (project specific determination); and
For any density/ intensity beyond the General Plan	Requirement: <ul style="list-style-type: none"> Comply with relevant CAP measures identified in the CAP Consistency Review Checklist; Implement all feasible on-site design features and mitigation measures; and Implement off-site mitigation, which may include purchase of carbon offsets for the remainder GHG emissions 	<ul style="list-style-type: none"> Implement off-site mitigation, which may include purchase of carbon offsets for the remainder GHG emissions 	Requirement: <ul style="list-style-type: none"> Comply with relevant CAP measures identified in the CAP Consistency Review Checklist; Implement all feasible on-site design features and mitigation measures; and Implement off-site mitigation, which may include purchase of carbon offsets for the remainder GHG emissions 	<ul style="list-style-type: none"> Implement off-site mitigation, which may include purchase of carbon offsets for the remainder GHG emissions
Outcome for General Plan density/ intensity	<ul style="list-style-type: none"> Consistency with CAP 	<ul style="list-style-type: none"> For all project densities/intensities: <ul style="list-style-type: none"> Achieve net zero GHG emissions – to avoid conflicting with the CAP emission forecasts 	<ul style="list-style-type: none"> Consistency with the CAP 	<ul style="list-style-type: none"> For all project densities/intensities: <ul style="list-style-type: none"> Achieve net zero GHG emissions – to avoid conflicting with the CAP emission forecasts
Outcome for density/ intensity beyond General Plan	<ul style="list-style-type: none"> Achieve a no net increase in GHG emissions for increased density component – to avoid conflicting with the CAP emission forecasts 		<ul style="list-style-type: none"> Achieve a no net increase in GHG emissions for increased density component – to avoid conflicting with the CAP emission forecasts 	

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