

Section 4.7 Greenhouse Gas Emissions

4.7.1 INTRODUCTION

This purpose of this section is to evaluate the potential global climate change impacts associated with the Project. The Project's potential direct and cumulative contribution to greenhouse gas (GHG) emissions and global climate change are analyzed. Additionally, it also recommends mitigation measures to avoid or lessen the significance of potential impacts. Information presented in this Section is based upon the 2003 *County of Riverside General Plan* (GPA No. 618), *General Plan EIR No. 441* (2003), Air Quality Data provided by the California Air Resources Board (CARB), the *Temecula Valley Wine Country Greenhouse Gas Reduction Workbook* prepared by the County of Riverside Planning Department, the *Greenhouse Gas Impact Assessment Technical Report* (October 2011) prepared by PCR Services Corporation (Appendix E), the *Southwest Area Plan*, proposed Temecula Valley Wine Country Policy Area (2011), Wine Country zones of Ordinance No. 348, and the *Temecula Valley Wine Country Design Guidelines*.

Land use and traffic data are based on the Project's *Land Use Buildout Analysis* (Appendix J) and the Project's *Traffic Impact Study* (Appendix I). Refer to Section 4.3, *Air Quality*, for detailed construction-related and operational emissions, as well as additional background information on air quality. Refer to *Air Quality Technical Study* (Appendix C) for detailed air quality modeling assumptions and results. Climate change protocols, methods, and emission factors were incorporated from numerous sources, including the California Climate Action Registry (CCAR) General Reporting Protocol (version 3.1, January 2009), the Local Government Operations Protocol (LGOP) (version 1.1, May 2010), and the Draft Community-wide GHG Emissions Protocol under development by the Association of Environmental Professionals (AEP) and the International Council for Local Environmental Initiatives (ICLEI).

4.7.2 EXISTING CONDITIONS

OVERVIEW OF GREENHOUSE GASES

The State of California recognized that anthropogenic (human-caused) GHG emissions are contributing to changes in the global climate, and that such changes are having and will have adverse effects on the environment, the economy, and public health. These are cumulative effects of past, present, and future actions worldwide. While worldwide contributions of GHG emissions are expected to have widespread consequences, it is not possible to link particular changes to the environment of California or elsewhere to GHG emitted from a particular source or location. Thus, when considering a project's contribution to impacts from climate change, it is possible to examine the quantity of GHG emissions that would be emitted either directly from project sources or indirectly from other sources, such as production of electricity as a result of activities or land use development in the County.

GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities, primarily through the combustion of fossil fuels. The State of California has been at the forefront of developing solutions to address global climate change and reduce anthropogenic GHG emissions.

State law defines GHG to include the following compounds: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆) (CEQA Guidelines, Section 15364.5; Health and Safety Code, Section 38505(g)). The most-common GHG that results from human activity is carbon dioxide, followed by methane and nitrous oxide. Because GHGs have variable potencies, a common metric of carbon dioxide equivalents (CO₂e) is used to report their combined potency. The potency each GHG has in the atmosphere is measured as a combination of the volume of its emissions and its Global Warming Potentials (GWP)¹, and is expressed as a function of the potency with respect to the same mass of CO₂. By multiplying the amount in metric tons of each individual gas by their respective GWP, all GHGs can be reported in the common unit of metric tons² of CO₂e (MT CO₂e). The GHG compounds listed above are described as follows:

- Carbon Dioxide (CO₂). Carbon dioxide is primarily generated by fossil fuel combustion in stationary and mobile sources. Due to the emergence of industrial facilities and mobile sources in the past 250 years, the concentration of CO in the atmosphere has increased 35 percent.³ Carbon dioxide is the most widely emitted GHG and is the reference gas (GWP of 1) for determining GWPs for other GHGs.
- Methane (CH₄). CH₄ is emitted from biogenic sources, incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. In the United States, the top three sources of methane are landfills, natural gas systems, and enteric fermentation. CH₄ is the primary component of natural gas, which is used for space and water heating, steam production, and power generation. The GWP of CH₄ is 21.
- Nitrous Oxide (N₂O). N₂O is produced by both natural and human-related sources. Primary human-related sources include agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of N₂O is 310.
- Hydrofluorocarbons (HFCs). HFCs are typically used as refrigerants for both stationary refrigeration and mobile air conditioning. The use of HFCs for cooling and foam blowing is growing, as the continued phase out of chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) gains momentum. The GWP of HFCs range from 140 for HFC-152a to 6,300 for HFC-236fa.
- Perfluorocarbons (PFCs). PFCs are compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semi conductor manufacturing. PFCs are potent GHGs with a GWP several thousand times that of carbon dioxide, depending on the specific PFC. Another area of concern regarding PFCs is their long atmospheric lifetime (up to 50,000 years).⁴ The GWP of PFCs range from 6,500 to 9,200.
- Sulfur hexafluoride (SF₆). SF₆ is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high-voltage equipment that transmits and

¹ The potential of a gas or aerosol to trap heat in the atmosphere.

² One metric ton (MT) equals 1,000 kilograms or 2,204 pounds. Note, one 'short ton' is 2,000 pounds.

³ United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990 to 2004*, April 2006, <http://www.epa.gov/climatechange/emissions/usinventoryreport.html>.

⁴ United States Environmental Protection Agency, *High GWP Gases and Climate Change*, October 19, 2006, <http://www.epa.gov/highgwp/scientific.html#pfc>.

distributes electricity. SF₆ is the most-potent GHG that has been evaluated by the Intergovernmental Panel on Climate Change with a GWP of 23,900. However, its global warming contribution is not as high as the GWP would indicate due to its low mixing ratio compared to carbon dioxide (4 parts per trillion [ppt] in 1990 versus 365 parts per million [ppm]).⁵

Due to the successful global bans on chlorofluorocarbons (primarily used as refrigerants, aerosol propellants and cleaning solvents), Riverside County does not generate significant emissions of these GHGs. The same has occurred for other synthesized gases such as hydrofluorocarbons (HFCs) and carbon tetrafluoride (CF₄) which have been banned and are no longer available on the market. Because of the ban, Riverside County will not generate additional emissions of these GHGs and therefore, they are not considered any further in this document. Sulfur hexafluoride (SF₆) is another GHG with a high GWP (23,900 times that of CO₂); as stated above, it is mainly used as a gaseous dielectric medium in electric switchgear of high-voltage electric transmission lines and medical use in retinal detachment surgery and ultrasound imaging and in both sources it is not released into the atmosphere. The Project does not include new sources of SF₆ and is therefore not considered further in this document.

In order to establish a GHG emissions baseline that is currently being emitted into the environment, an inventory of GHG emissions within unincorporated Riverside County and the County government operations was conducted. The GHG emissions inventory focuses on the sources and amounts of GHG emissions generated from activities with land uses and related activities within the unincorporated areas under the jurisdictional control of the County. The year 2008 was used to inventory emissions for existing conditions as this was the most-recent year with complete data. The total emissions from unincorporated Riverside County in 2008 totaled 7.1 million metric tons of carbon dioxide equivalent (MMTCO_{2e}). Table 4.7-1, *2008 Net Total Emissions for Unincorporated Riverside County*, summarizes the emissions by emissions category. The categories included in this inventory are: transportation, energy, area source, purchased water, solid waste, and agriculture. The methodology and data sources used to estimate existing GHG emissions as well as projected emissions for the year 2035 are described below in the impacts and mitigation section in this report.

Vineyards have been a part of the Temecula Valley since the 1800s. The existing land uses within the Project area are currently a mixture of agriculture, equestrian, and residential uses of varying densities. The General Plan Land Use designations within the Project area include Agriculture: Agriculture (AG:AG)⁶, Rural: Rural Residential (R:RR) and Rural Mountainous (R:RM), Rural Community: Estate Density Residential (RC:EDR), and Community Development: Commercial Tourist (CD:CT) and Medium Density Residential (CD:MDR) as depicted in Exhibit 4.10-1, *General Plan Land Use*. A total of approximately 42 wineries are established and operating within the boundaries of the Project; approximately 41 of these wineries are located within the proposed Winery District of the Project and the one remaining winery is located in the Residential District as shown in Exhibit 3.0-5, *Wine Country Policy Area with Districts*.

⁵ United States Environmental Protection Agency, *High GWP Gases and Climate Change*, June 22, 2010, <http://www.epa.gov/highgwp/scientific.html#sf6>, accessed on May 16, 2011.

⁶ General Plan land use designations are listed in the following format - Foundation Component: General Plan Land Use Designation.

Table 4.7-1
2008 Net Total Emissions for Unincorporated Riverside County

Emissions Category	Metric Tons of CO ₂
Transportation	2,850,520
Energy	1,585,565
Area Source Emissions	269,181
Purchased Water	152,473
Solid Waste	214,149
Agriculture	2,030,431
Total	7,102,319

Source: *Greenhouse Gas Impact Assessment*, November 2011 (Appendix E), Table 1.

4.7.3 REGULATORY FRAMEWORK

EXISTING FEDERAL REGULATIONS

Kyoto Protocol

The United States participated in the United Nations Framework Convention on Climate Change (UNFCCC) (signed on March 21, 1994). The Kyoto Protocol is a treaty made under the UNFCCC and was the first international agreement to regulate GHG emissions. It has been estimated that if the commitments outlined in the Kyoto Protocol are met, global GHG emissions could be reduced by an estimated 5 percent from 1990 levels during the first commitment period of 2008–2012 (UNFCCC 1997). It should be noted that although the United States is a signatory to the Kyoto Protocol, Congress has not ratified the Protocol and the United States is not bound by the Protocol’s commitments.

In anticipation of providing an updated international treaty for the reduction of GHG emissions, representatives from 170 countries met in Copenhagen in December 2009 to ratify an updated UNFCCC agreement (Copenhagen Accord). The Copenhagen Accord, a voluntary agreement between the United States, China, India, and Brazil, recognizes the need to keep global temperature rise to below 2°C and obliges signatories to establish measures to reduce GHG emissions and to prepare to provide help to poorer countries in adapting to climate change. The countries met again in Cancun in December 2010 and adopted the Cancun Agreements, which reinforces and builds upon the Copenhagen Accord. The nations agreed to recognize country targets, develop low-carbon development plans and strategies, and report inventories annually. In addition, agreements were made regarding financing for developing countries and technology support and coordination among all nations. The next conference of the parties is scheduled for December 2011 in South Africa.

Climate Change Technology Program

The United States has opted for a voluntary and incentive-based approach toward emissions reductions in lieu of the Kyoto Protocol’s mandatory framework. The Climate Change Technology Program (CCTP) is a multi-agency research and development coordination effort (which is led by the Secretaries of Energy and Commerce) that is charged with carrying out the President’s National Climate Change Technology Initiative.

United States Environmental Protection Agency

The United States Environmental Protection Agency (USEPA) is responsible for implementing federal policy to address global climate change. The federal government administers a wide array of public-private partnerships to reduce GHG intensity generated by the United States. These programs focus on energy efficiency, renewable energy, methane and other non-CO₂ gases, agricultural practices, and implementation of technologies to achieve GHG reductions. The USEPA implements several voluntary programs that substantially contribute to the reduction of GHG emissions. Programs include: the State Climate and Energy Partner Network that allows for the exchange of information between federal and state agencies regarding climate and energy, the Climate Leaders program for companies, the Energy Star labeling system for energy-efficient products, and the Green Power Partnership for organizations interested in buying green power. All of these programs play a significant role in encouraging voluntary reductions from large corporations, consumers, industrial and commercial buildings, and many major industrial sectors.

In *Massachusetts v. Environmental Protection Agency* (Docket No. 05–1120), the U.S. Supreme Court held in April of 2007 that the USEPA has authority to regulate GHGs, and the USEPA's reasons for not regulating this area did not fit the statutory requirements. As such, the U.S. Supreme Court ruled that the USEPA should be required to regulate CO₂ and other GHGs as pollutants under Section 202(a)(1) of the federal Clean Air Act (CAA).

The USEPA issued a Final Rule for mandatory reporting of GHG emissions in October of 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufactures of heavy-duty and off-road vehicles and vehicle engines, and requires annual reporting of emissions. The Final Rule was effective December 29, 2009, with data collection beginning January 1, 2010, and the first annual reports due in March 2011. This rule does not regulate the emission of GHGs; it only requires the monitoring and reporting of GHG emissions for those sources above certain thresholds (USEPA 2009). USEPA adopted a Final Endangerment Finding for the six defined GHGs on December 7, 2009. The Endangerment Finding is required before USEPA can regulate GHG emissions under Section 202(a)(1) of the CAA in fulfillment of the U.S. Supreme Court decision.

On May 13, 2010, the USEPA issued a Final Rule that establishes a common sense approach to addressing GHG emissions from stationary sources under the CAA permitting programs. In the first phase of the Rule (January 2011-June 2011), only sources currently subject to the New Source Review Prevention of Significant Deterioration (PSD) permitting program (i.e., those that are newly-constructed or modified in a way that significantly increases emissions of a pollutant other than GHGs) are subject to permitting requirements for their GHG emissions under PSD. For these projects, only GHG increases of 75,000 tons per year (tpy) CO₂e or more need to determine the Best Available Control Technology (BACT) for their GHG emissions. This final rule sets a threshold of 75,000 tons per year for GHG emissions. Similarly for the operating permit program, only sources currently subject to the program are subject to Title V requirements for GHG. In the second phase of the rule (July 2011-June 2013) new construction projects that exceed a threshold of 100,000 tpy and modifications of existing facilities that increase emissions by at least 75,000 tpy will be subject to permitting requirements. Additionally, operating facilities that emit at least 100,000 tpy will be subject to Title V permitting requirements (USEPA 2010a). New and existing industrial facilities that meet or exceed that threshold will require a permit under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs. This rule took effect January 2, 2011.

STATE REGULATIONS

California Air Resources Board

The California Air Resources Board (CARB), a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California. In this capacity, CARB conducts research, sets state ambient air quality standards (California Ambient Air Quality Standards (CAAQS)), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts. The SIP is required for the State to take over implementation of the Clean Air Act.

Executive Order S-3-05

California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following GHG emission reduction targets:

- By 2010, California shall reduce GHG emissions to 2000 levels;
- By 2020, California shall reduce GHG emissions to 1990 levels; and
- By 2050, California shall reduce GHG emissions to 80 percent below 1990 levels.

The first California Climate Action Team (CCAT) Report to the Governor in 2006 contained recommendations and strategies to help meet the targets in Executive Order S 3-05. The 2010 CCAT Biennial Report, finalized in December 2010, expands on the policy oriented 2006 assessment. The new information detailed in the CCAT Biennial Report includes development of revised climate and sea-level projections using new information and tools that have become available in the last two years; and an evaluation of climate change within the context of broader social changes, such as land-use changes and demographic shifts (CCAT 2010). The action items in the report focus on the preparation of the Climate Change Adaptation Strategy, required by Executive Order S-13-08, described below.

Assembly Bill 32, The Global Warming Solutions Act of 2006

In 2006, the California State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006, focusing on reducing GHG in California. GHGs as defined under AB 32 include CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆. AB 32 required CARB to adopt rules and regulations directing State actions that would achieve GHG emissions equivalent to 1990 statewide levels by 2020. On or before June 30, 2007, CARB was required to publish a list of discrete early action GHG emission reduction measures that would be implemented to be made enforceable by 2010. The law further required that such measures achieve the maximum technologically feasible and cost-effective reductions in GHGs from sources or categories of sources to achieve the statewide GHG emissions limit for 2020.

CARB published its *Final Report for Proposed Early Actions to Mitigate Climate Change in California* in October 2007. This report described recommendations for discrete early action measures to reduce GHG emissions as part of California's AB 32 GHG reduction strategy. Resulting from this are three new regulations proposed to meet the definition of "discrete early action greenhouse gas reduction measures," including the following: a low-carbon fuel standard; reduction of HFC 134a emissions from

non-professional servicing of motor vehicle air conditioning systems; and improved landfill methane capture (CARB 2007d). CARB estimates that by 2020, the reductions from those three measures would be approximately 13 to 26 MMT CO₂e.

Under AB 32, CARB has the primary responsibility for reducing GHG emissions. In 2007, CARB released a report, *California 1990 GHG Emissions Level and 2020 Emissions Limit* (CARB 2007a), that determined the statewide levels of GHG emissions in 1990 to be 427 MMT CO₂e. Additionally, in December 2008, CARB adopted the Climate Change Scoping Plan, which outlines the State's strategy to achieve the 2020 GHG limit. As part of the Scoping Plan, a GHG emissions inventory was performed demonstrating that California will need to reduce CO₂e emissions by 169 MMT or approximately 28.5 percent from the state's projected 2020 emissions level of 596 MMT CO₂e. This Scoping Plan proposes a comprehensive set of actions designed to reduce overall GHG emissions in California, achieve the goal of AB 32, improve the environment, reduce dependence on oil, diversify energy sources, save energy, create new jobs, and enhance public health. The plan emphasizes a cap-and-trade program, but also includes the discrete early actions (CARB 2008).

Senate Bill 97

SB 97, enacted in 2007, amended CEQA to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. It directed the California Office of Planning and Research (OPR) to develop revisions to the State CEQA Guidelines "for the mitigation of GHG emissions or the effects of GHG emissions" and directed the Resources Agency to certify and adopt these revised State CEQA Guidelines by January 2010. The revisions were completed March 2010 and codified into the California Code of Regulations and became effective within 120 days pursuant to CEQA. The amendments provide regulatory guidance for the analysis and mitigation of the potential effects of GHG emissions.

Senate Bill 375

Senate Bill 375 (SB 375), which establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions, was adopted by the State on September 30, 2008. On September 23, 2010, CARB adopted the vehicular GHG emissions reduction targets that had been developed in consultation with the metropolitan planning organizations (MPOs); the targets require a 7- to 8-percent reduction by 2020 and between 13 to 16 percent reduction by 2035 for each MPO. SB 375 recognizes the importance of achieving significant GHG reductions by working with cities and counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs, such as the Southern California Association of Governments (SCAG), which includes Riverside County, will work with local jurisdictions in the development of Sustainable Communities Strategies (SCS) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. SCAG's reduction target for per capita vehicular emissions is 8 percent by 2020 and 13 percent by 2035 (CARB 2010b). The MPOs will prepare their first SCS according to their respective regional transportation plan (RTP) update schedule; to date, no region has adopted an SCS. The first of the RTP updates with SCS strategies are expected in 2012.

Executive Order S-13-08

On November 14, 2008, Governor Schwarzenegger issued Executive Order S-13-08, the Climate Adaptation and Sea Level Rise Planning Directive, to provide clear direction on how the State should

plan for future climate impacts. Executive Order S-13-08 calls for the implementation of four key actions to reduce the vulnerability of California to climate change:

- Initiate California's first statewide Climate Change Adaptation Strategy that will assess the State's expected climate change impacts, identify where California is most vulnerable, and recommend climate adaptation policies;
- Request that the National Academy of Sciences establish an expert panel to report on sea level rise impacts in California in order to inform State planning and development efforts;
- Issue interim guidance to State agencies for how to plan for sea level rise in designated coastal and floodplain areas for new and existing projects; and
- Initiate studies on critical infrastructure projects and land use policies vulnerable to sea level rise.

The 2009 CAS Report summarizes the best-known science on climate change impacts in the state to assess vulnerability, and outlines possible solutions that can be implemented within and across state agencies to promote resiliency. This is the first step in an ongoing, evolving process to reduce California's vulnerability to climate impacts (California Natural Resources Agency 2009a).

California Code of Regulations (CCR) Title 24, Part 6

CCR Title 24, Part 6: California's Energy Efficiency Standards for Residential and Non-residential Buildings (Title 24) were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Since use of fossil fuels to produce energy results in GHG emissions, energy-efficient buildings that use less energy result in less GHG emissions as well.

The California Energy Commission (CEC) adopted Updated Title 24 Standards in 2008 and they went into effect on August 1, 2009. When the standards went into effect in 2009, compliance through 2010 was voluntary. As of January 1, 2011, the standards are mandatory for all new buildings constructed in the State. These changes affect Building Energy Efficiency Standards, in order to:

- Provide California with an adequate, reasonably priced, and environmentally sound supply of energy;
- Respond to AB 32, the Global Warming Solutions Act of 2006, which mandates that California must reduce its GHG emissions to 1990 levels by 2020;
- Pursue California energy policy, which states that energy efficiency is the resource of first choice for meeting California's energy needs;
- Act on the findings of California's Integrated Energy Policy Report (IEPR) that concludes that the Standards are the most cost-effective means to achieve energy efficiency, expects the Building Energy Efficiency Standards to continue to be upgraded over time to reduce electricity and peak demand, and recognizes the role of the Standards in reducing energy related to meeting California's water needs and in reducing GHG emissions;
- Meet the West Coast Governors' Global Warming Initiative commitment to include aggressive energy efficiency measures into updates of state building codes; and
- Meet the energy efficiency goals of Executive Order S-20-04, in which established California's Green Building Initiative. The Executive Order seeks to improve the energy efficiency of nonresidential buildings through aggressive standards toward the target of a 20-percent reduction in building energy use from a 2003 baseline by year 2015.

The CalGreen code addresses energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality.⁷

EXISTING REGIONAL REGULATIONS

Air Quality Management Districts

The Project area is located in the South Coast Air Basin (Basin). Air emissions are regulated by the South Coast Air Quality Management District (SCAQMD). The SCAQMD is responsible for promoting and improving the air quality of the Basin. This is accomplished through air quality monitoring, evaluation, education, implementation of control measures to reduce emissions from stationary sources, permitting and inspection of pollution sources, enforcement of air quality regulations, and by supporting and implementing measures to reduce emissions from motor vehicles. After AB 32 was passed, SCAQMD formed a Climate Change Committee along with a GHG CEQA Significance Thresholds Working Group and the SoCal Climate Solutions Exchange Technical Advisory Group. On September 5, 2008, the SCAQMD Board approved the SCAQMD Climate Change Policy, which outlines actions the SCAQMD will take to assist businesses and local governments in implementing climate change measures, decrease the carbon emissions, and provide information to the public regarding climate change. On December 5, 2008, the Board approved interim CEQA GHG significance thresholds for stationary sources, and related rules, and plans. SCAQMD also adopted a tiered approach for determining significance. Projects that are exempt from CEQA or consistent with an approved local GHG reduction plan can be found to be less than significant. Tier 3, the primary tier SCAQMD will use for determining significance, has a screening significance threshold designed to capture 90 percent of sector GHG emissions.

Although the Project area is located entirely in the Basin, being near to the San Diego County boundary, a portion of mobile source emissions associated with implementing projects is expected to originate from San Diego County. Therefore, mobile source emissions under the jurisdiction of the San Diego Air Pollution Control District (SDAPCD) are also addressed in this analysis. The SDAPCD has not adopted CEQA threshold levels for projects implemented in San Diego. Moreover, since the source of emissions in San Diego County from the implementation of the Project would be motor vehicles, it is most appropriate to discuss impacts with respect to the MPOs.

Southern California Association of Governments (SCAG) and San Diego Association of Governments (SANDAG)

Through the SB 375 process, MPOs, such as SCAG, which includes Riverside County, and the San Diego Association of Governments (SANDAG) with jurisdiction over San Diego County, will work with local jurisdictions in the development of sustainable communities strategies (SCS) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. SCAG's reduction target for per capita vehicular emissions is 8 percent by 2020 and 13 percent by 2035 (CARB 2010). SCAG is currently in the process of updating their RTP and completing the first SCS for the region. The agency plans to adopt the RTP, SCS, and associated PEIR in April 2012.

SANDAG and the SDAPCD began working together to reduce GHG emissions.⁸ SANDAG is in the process of developing its first RTP subject to provisions of Senate Bill 375 (SB 375). The 2050 RTP is scheduled

⁷ California 2010 Green Building Standards Code, California Code of Regulations Title 24, Part 11.

⁸ Source: http://www.sdapcd.org/homepage/cl_change_forum.html.

for adoption by the SANDAG Board of Directors in summer 2011. GHG-reduction strategies SANDAG is considering include increasing transit service; freeway improvements to reduce bottlenecks; and enhancements to programs aimed at taking more cars off the road, such as alternative work schedules and incentives for carpooling and vanpooling. CARB released its draft GHG emissions target and the San Diego region will be required to reduce GHG emissions from cars and light trucks 7 percent per capita by 2020 and 13 percent by 2035, according to targets set September 23, 2010 by the CARB. SANDAG will further refine its GHG-reducing strategies accordingly.⁹

EXISTING COUNTY REGULATIONS

The following County ordinances and Board of Supervisors Policies address impacts related to global climate change.

Ordinance No. 706: Mobile Source Air Pollution Reduction Programs (Funding)

This ordinance supports the SCAQMD's imposition of the vehicle registration fee and brings the County into compliance with the requirements of the Health and Safety Code in order to receive fee revenues for the purpose of implementing programs to reduce air pollution from motor vehicles. Although this ordinance is directed toward air pollution, GHG emissions are also reduced.

Ordinance No. 726: Transportation Demand Management for New Development

This ordinance sets the following goals related to efficiently utilizing the existing and planned transportation system and reducing vehicle emissions:

- Reduce vehicle trips generated by new development by 12 percent commencing in 1994, by 20 percent commencing in 2000, and by 30 percent commencing in 2006.
- Reduce overall projected 1994 vehicle trips emanating from the County of Riverside by 7 percent.
- Relieve traffic congestion in an effort to improve air quality.
- Produce an efficient transportation demand management system which utilizes the existing system to its best potential
- Maintain or achieve minimum Level-of-Service "C" for all new development projects.
- The ordinance further requires that proposed projects prepare a Traffic Impact Analysis, which must include a Transportation Demand Management Plan describing the proposed trip level and outlining proposed transportation demand management measures for the project to achieve the trip level proposed.

Ordinance No. 748: Mitigation of Traffic Congestion Through Signalization

This ordinance adopts and sets forth policies, regulations and fees relating to the funding and installation of Traffic Signals that are a part of the mitigation of the cumulative environmental impacts of traffic congestion generated by new developments and land use changes.

Ordinance No. 659: Development Impact Fee (DIF) Program for Residential Development

The Development Impact Fee (DIF), established by this ordinance, shall be paid for each residential unit,

⁹ Source: <http://www.sandag.org/index.asp?newsid=666&fuseaction=news.detail>.

development project, or a portion thereof to be constructed in order to assist in providing revenue to acquire or construct public facilities, purchase regional parkland, and preserve habitat and open space. Constructing public facilities and preserving open space associated with new developments is necessary to promote public health, safety, comfort, and welfare. Specifically, air pollutants are mitigated by promoting the location of public facilities and preservation of open space in close proximity to new developments, thus reducing vehicle travel.

Ordinance No. 655: Regulating Light Pollution

This ordinance limits the use of lights within the vicinity of the Palomar Observatory. Although the primary intent of the ordinance is to limit light pollution in order to avoid interference with astronomical observation and research, the ordinance also limits the amount of time lights can be on. This reduces electricity use and indirectly reduces emissions of GHGs.

Ordinance No. 754: Stormwater/Urban Runoff Management and Discharge Control

This ordinance reduces pollutants in stormwater discharges to the maximum extent practicable, regulates illicit connections and discharges to the storm drain system, and regulates non-stormwater discharges to the storm drain system. The protection and enhancement of the water quality as a result of this ordinance reduces GHG emissions in the County in two main ways: first, the ordinance contributes to decreased electricity use in the treatment of the water; second, the decreased treatment also leads to a decrease in methane emissions from digester systems used in the treatment process.

Ordinance No. 859: Establishing Water-Efficient Landscaping Standards

This ordinance has the following aims:

- Establish provisions for water management practices and water waste prevention;
- Establish a structure for planning, designing, installing, maintaining, and managing water efficient landscapes in new and rehabilitated projects;
- Reduce the water demands from landscapes without a decline in landscape quality or quantity;
- Retain flexibility and encourage creativity through appropriate design;
- Assure the attainment of water-efficient landscape goals by requiring that landscapes not exceed a maximum water demand of seventy percent or its reference evapotranspiration or any lower percentage as may be required by state legislation, whichever is stricter;
- Eliminate water waste from overspray and/or runoff;
- Achieve water conservation by raising the public awareness of the need to conserve water through education and motivation to embrace an effective water demand management program; and
- Implement the requirements of the California Water Conservation in Landscaping Act 2006 and the California Code of Regulations Title 23, Division 2, Chapter 2.7.
- Increasing water efficiency works towards reducing GHG emissions by reducing the electricity associated with water use and thus, the emissions associated with the electricity use.

Ordinance No. 559: Regulating the Removal of Trees

This ordinance states that “no person shall remove any living native tree on any parcel or property greater than one-half acre in size, located in an area above 5,000 feet in elevation and within the unincorporated area of the County of Riverside, without first obtaining a permit to do so.” Trees, as they grow, provide for carbon storage; keeping trees in their place retains this storage of GHGs.

Ordinance No. 625: Agricultural Activities, Nuisance Defense (“Right to Farm Ordinance”)

The “Right to Farm Ordinance” establishes that existing agricultural operations cannot be or become a nuisance due to any changed condition in or about the locality as long as the agricultural activities have been in operation for more than three years and were not a nuisance in the past. This policy preserves the County’s existing agricultural land and encourages the continued investment in efficient agriculture production.

Ordinance No. 695: Requiring the Abatement of Hazardous Vegetation

The main purpose of this ordinance is to protect Riverside County residents and homes from wildfires. The policy requires all owners or occupants to remove all combustible material and hazardous vegetation.

Ordinance No. 657: Regulating Collection and Removal of Solid Waste

This ordinance regulates the collection, transfer, and removal of solid waste from residential and commercial units in unincorporated Riverside County. The ordinance specifies handling and operation specifications for waste haulers.

Ordinance No. 745: Comprehensive Collection and Disposal of Solid Waste

This ordinance provides for the payment, comprehensive collection, and disposal of solid waste within specified unincorporated areas of Riverside County.

EXISTING GENERAL PLAN POLICIES REGULATIONS

The following existing and proposed General Plan polices address impacts related to global climate change:

Land Use (LU) Element Policies

Policy LU 1.5 The County shall participate in regional efforts to address issues of mobility, transportation, traffic congestion, economic development, air and water quality, and watershed and habitat management with cities, local and regional agencies, stakeholders, Indian nations, and surrounding jurisdictions.

Policy LU 2.1 Accommodate land use development in accordance with the patterns and distribution of use and density depicted on the General Plan Land Use Map (Figure LU-1) and the Area Plan Land Use Maps, in accordance with the following:

- a. Provide a land use mix at the countywide and area plan levels based on projected need and supported by evaluation of impacts to the environment, economy, infrastructure, and services.
- b. Accommodate a range of community types and character, from agricultural and rural enclaves to urban and suburban communities.
- c. Provide for a broad range of land uses, intensities, and densities, including a range of residential, commercial, business, industry, open space, recreation, and public facilities uses.

- d. Concentrate growth near community centers that provide a mixture of commercial, employment, entertainment, recreation, civic, and cultural uses to the greatest extent possible.
- e. Concentrate growth near or within existing urban and suburban areas to maintain the rural and open space character of Riverside County to the greatest extent possible.
- f. Site development to capitalize upon multi-modal transportation opportunities and promote compatible land use arrangements that reduce reliance on the automobile.
- g. Prevent inappropriate development in areas that are environmentally sensitive or subject to severe natural hazards.

Policy LU 4.1 Require that new developments be located and designed to visually enhance, not degrade the character of the surrounding area through consideration of the following concepts:

- a. Compliance with the design standards of the appropriate area plan land use category.
- b. Require that structures be constructed in accordance with the requirements of the County's zoning, building, and other pertinent codes and regulations.
- c. Require that an appropriate landscape plan be submitted and implemented for development projects subject to discretionary review.
- d. Require that new development utilize drought tolerant landscaping and incorporate adequate drought-conscious irrigation systems.
- e. Pursue energy efficiency through street configuration, building orientation, and landscaping to capitalize on shading and facilitate solar energy, as provided for in Title 24 of the California Administrative Code.
- f. Incorporate water conservation techniques, such as groundwater recharge basins, use of porous pavement, drought tolerant landscaping, and water recycling, as appropriate.
- g. Encourage innovative and creative design concepts.
- h. Encourage the provision of public art.
- i. Include consistent and well-designed signage that is integrated with the building's architectural character.
- j. Provide safe and convenient vehicular access and reciprocal access between adjacent commercial uses.
- k. Locate site entries and storage bays to minimize conflicts with adjacent residential neighborhoods.
- l. Mitigate noise, odor, lighting, and other impacts on surrounding properties.
- m. Provide and maintain landscaping in open spaces and parking lots.
- n. Include extensive landscaping.
- o. Preserve natural features, such as unique natural terrain, drainage ways, and native vegetation, wherever possible, particularly where they provide continuity with more extensive regional systems.
- p. Require that new development be designed to provide adequate space for pedestrian connectivity and access, recreational trails, vehicular access and parking, supporting functions, open space, and other pertinent elements.
- q. Design parking lots and structures to be functionally and visually integrated and connected.

- r. Site buildings access points along sidewalks, pedestrian areas, and bicycle routes, and include amenities that encourage pedestrian activity.
- s. Establish safe and frequent pedestrian crossings.
- t. Create a human-scale ground floor environment that includes public open areas that separate pedestrian space from auto traffic or where mixed, it does so with special regard to pedestrian safety.

Policy LU 7.12 Improve the relationship and ratio between jobs and housing so that residents have an opportunity to live and work within the County.

Policy LU 8.1 Provide for permanent preservation of open space lands that contain important natural resources, hazards, water features, watercourses, and scenic and recreational values.

Policy LU 8.3 Incorporate open space, community greenbelt separators, and recreational amenities into Community Development areas in order to enhance recreational opportunities and community aesthetics, and improve the quality of life.

Policy LU 10.1 Provide sufficient commercial and industrial development opportunities in order to increase local employment levels and thereby minimize long-distance commuting.

Policy LU 10.3 Accommodate the development of community centers and concentrations of development to reduce reliance on the automobile and help improve air quality.

Policy LU 10.4 Provide options to the automobile in communities, such as transit, bicycle and pedestrian trails, to help improve air quality.

Policy LU 12.1 Provide land use arrangements that reduce reliance on the automobile and improve opportunities for pedestrian, bicycle, and transit use in order to minimize congestion and air pollution.

Policy LU 12.2 Locate employment and service uses in areas that are easily accessible to existing or planned transportation facilities.

Policy LU 12.3 Locate transit stations in community centers and at places of public, employment, entertainment, recreation, and residential concentrations.

Policy LU 12.4 Incorporate safe and direct multi-modal linkages in the design and development of projects, as appropriate.

Circulation (C) Element Policies

Policy C 1.2 Support development of a variety of transportation options for major employment and activity centers including direct access to transit routes, primary arterial highways, bikeways, park-n-ride facilities, and pedestrian facilities.

Policy C 1.7 Encourage and support the development of projects that facilitate and enhance the use of alternative modes of transportation, including pedestrian-oriented retail and activity centers, dedicated bicycle lanes and paths, and mixed-use community centers.

- Policy C 4.1 Provide facilities for the safe movement of pedestrians within developments, as specified in the County Ordinances Regulating the Division of Land of the County of Riverside.
- Policy C 4.9 Coordinate with all transit operators to ensure that pedestrian facilities are provided along and/or near all transit routes, whenever feasible. New land developments may be required to provide pedestrian facilities due to existing or future planned transit routes even if demand for pedestrian facility is not otherwise warranted.
- Policy C 5.2 Encourage the use of drought-tolerant native plants and the use of recycled water for roadway landscaping.
- Policy C 11.2 Incorporate the potential for public transit service in the design of developments that are identified as major trip attractions (i.e., community centers, tourist and employment centers), as indicated in ordinances Regulating the Division of Land of the County of Riverside.
- Policy C 11.4 Offer incentives to new development to encourage it to locate in a transit-oriented area such as a community center or along a designated transit corridor near a station.
- Policy C 11.5 Accommodate transit through higher densities, innovative design, and right-of-way dedication.
- Policy C 11.7 Promote development of transit centers and park-n-rides for use by all transit operators, including development of multi-modal facilities.
- Policy C 12.1 Support the development and implementation of the Transit Oasis concept in conjunction with RCTC, local transit operators, and cities.
- Policy C 12.2 Support the development of high-speed transit linkages, or express routes, between community centers and other major nodes of activity.
- Policy C 12.3 Establish a system of transit priority treatments or dedicated travel lanes to facilitate movement by the Transit Oasis vehicles within community centers and other major nodes of activity, where feasible.
- Policy C 13.2 Support continued improvements to AMTRAK and MetroLink rail passenger service within Riverside County and throughout the southern California region.
- Policy C 17.3 Ensure that the bikeway system incorporates the following:
- a. Interconnection of cities and unincorporated communities;
 - b. Provision of lanes to specific destinations such as state or county parks;
 - c. Provision for bicycle touring; and
 - d. Encouragement of bicycle commuting.
- Policy C 17.4 Ensure that alternative modes of motorized transportation, such as buses, trains, etc., plan and provide for transportation of recreational and commuting bicyclists and bicycles on public transportation systems.

Policy C 20.12 Encourage the use of alternative non-motorized transportation and the use of non-polluting vehicles.

Multipurpose Open Space (OS) Element Policies

- Policy OS 2.1 Encourage the installation of water-conserving systems such as dry wells and graywater systems, where feasible, especially in new developments. The installation of cisterns or infiltrators shall also be encouraged to capture rainwater from roofs for irrigation in the dry season and flood control during heavy storms.
- Policy OS 2.2 Where feasible, decrease stormwater runoff by reducing pavement in development areas, and by design practices such as permeable parking bays and porous parking lots with bermed storage areas for rainwater detention.
- Policy OS 2.3 Encourage native, drought-resistant landscape planting.
- Policy OS 2.5 Encourage continued agricultural water conservation and recommend the following practices where appropriate and feasible: lining canals, recovering tail water at the end of irrigated fields, and appropriate scheduling of water deliveries.
- Policy OS 10.1 Provide for orderly and efficient wind energy development in a manner that maximizes beneficial uses of the wind resource and minimizes detrimental effects to the residents and the environment of the County.
- Policy OS 11.1 Enforce the state Solar Shade Control Act, which promotes all feasible means of energy conservation and all feasible uses of alternative energy supply sources.
- Policy OS 11.2 Support and encourage voluntary efforts to provide active and passive solar access opportunities in new developments.
- Policy OS 11.3 Permit and encourage the use of passive solar devices and other state-of-the-art energy resources.
- Policy OS 12.1 Allow for the development of non-electrical, direct heat uses of geothermal heat and fluids for space, agricultural, and industrial heating in situations and localities where naturally occurring hydrothermal features will not be degraded.
- Policy OS 16.1 Continue to implement Title 24 of the State Building Code. Establish mechanisms and incentives to encourage architects and builders to exceed the energy efficiency standards of Title 24.
- Policy OS 16.2 Specify energy efficient materials and systems, including shade design technologies, for County buildings.
- Policy OS 16.3 Implement public transportation systems that utilize alternative fuels when possible, as well as associated urban design measures that support alternatives to private automobile use.

- Policy OS 16.7 Promote purchasing of energy-efficient equipment based on a fair return on investment, and use energy-savings estimates as one basis for purchasing decisions for major energy-using devices.
- Policy OS 16.9 Encourage increased use of passive, solar design and day-lighting in existing and new structures.
- Policy OS 16.10 Encourage installation and use of co-generating systems where they are cost-effective and appropriate.

Air Quality (AQ) Element Policies

- Policy AQ 1.1 Promote and participate with regional and local agencies, both public and private, to protect and improve air quality.
- Policy AQ 1.2 Support the Southern California Association of Government's (SCAG) Regional Growth Management Plan by developing intergovernmental agreements with appropriate governmental entities such as the Western Riverside Council of Governments (WRCOG), the Coachella Valley Association of Governments (CVAG), sanitation districts, water districts, and those subregional entities identified in the Regional Growth Management Plan.
- Policy AQ 1.3 Participate in the development and update of those regional air quality management plans required under federal and state law, and meet all standards established for clean air in these plans.
- Policy AQ 1.4 Coordinate with the SCAQMD and MDAQMD to ensure that all elements of air quality plans regarding reduction of air pollutant emissions are being enforced.
- Policy AQ 1.7 Support legislation which promotes cleaner industry, clean fuel vehicles and more efficient burning engines and fuels.
- Policy AQ 3.2 Seek new cooperative relationships between employers and employees to reduce vehicle miles traveled.
- Policy AQ 3.4 Encourage employee rideshare and transit incentives for employers with more than 25 employees at a single location.
- Policy AQ 4.1 Encourage the use of building materials/methods which reduce emissions.
- Policy AQ 4.2 Encourage the use of efficient heating equipment and other appliances, such as water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units.
- Policy AQ 4.4 Require residential building construction to comply with energy use guidelines detailed in Title 24 of the California Administrative Code.
- Policy AQ 5.1 Utilize source reduction, recycling and other appropriate measures to reduce the amount of solid waste disposed of in landfills.

- Policy AQ 5.2 Adopt incentives and/or regulations to enact energy conservation requirements for private and public developments.
- Policy AQ 5.4 Encourage the incorporation of energy-efficient design elements, including appropriate site orientation and the use of shade and windbreak trees to reduce fuel consumption for heating and cooling.
- Policy AQ 7.4 Offer incentives to businesses to control emissions and implement the AQMP
- Policy AQ 8.4 Support new mixed-use land use patterns and community centers which encourage community self-sufficiency and containment, and discourage automobile dependency.
- Policy AQ 8.5 Develop community centers in conformance with policies contained in the Land Use Element.
- Policy AQ 8.6 Encourage employment centers in close proximity to residential uses.
- Policy AQ 8.8 Promote land use patterns which reduce the number and length of motor vehicle trips.
- Policy AQ 8.9 Promote land use patterns that promote alternative modes of travel.
- Policy AQ 10.1 Encourage trip reduction plans to promote alternative work schedules, ridesharing, telecommuting and work-at-home programs, employee education and preferential parking.
- Policy AQ 10.2 Use incentives, regulations and Transportation Demand Management in cooperation with surrounding jurisdictions when possible to eliminate vehicle trips which would otherwise be made.
- Policy AQ 10.3 Assist merchants in encouraging their customers to shift from single occupancy vehicles to transit, carpools, bicycles, or foot.

4.7.4 SIGNIFICANCE THRESHOLD CRITERIA

The most-recent amendments relating to climate change and GHG emissions encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The amendments augmented Appendix G of the CEQA Guidelines, the sample environmental checklist form, to include a section on GHG emissions. According to the questions contained in Appendix G under Section VII, Greenhouse Gas Emissions, a project would have a significant impact if it would:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance.
- b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The State *CEQA Guidelines* (Section 15064.7) provide that, when available, the significance criteria established by the applicable lead agency may be relied upon to make determinations of significance.

Section 15064.4 of the *CEQA Guidelines* states “...[a] lead agency shall have discretion to determine, in the context of a particular project, whether to: (1) [u]se a model or methodology to quantify greenhouse gas emissions resulting from a project...; or (2) [r]ely on a qualitative analysis or performance based standards.”

Section 15064.7 of the State CEQA Guidelines also defines a threshold of significance as an identifiable quantitative, qualitative or performance level of a particular environmental effect, compliance with which determines the level of impact significance. CEQA gives wide latitude to lead agencies in determining what impacts are significant and does not prescribe thresholds of significance, analytical methodologies, or specific mitigation measures. CEQA leaves the determination of significance to the reasonable discretion of the lead agency and encourages lead agencies to develop and publish thresholds of significance to use in determining the significance of environmental effects. However, the County has yet established specific quantitative significance thresholds for GHG emissions for development projects.

The County of Riverside has determined that there are three appropriate numeric thresholds to determine significance of the Project under the first criterion. These criteria have been developed for the Project, and are not being proposed as County-wide policy. Specifically, GHG emissions will be compared to the following three thresholds:

3,000 MTCO₂e per year. This is adopted from the recommended SCAQMD’s Interim Thresholds document for commercial, residential, mixed use, and industrial development projects (details below); projects below this threshold are considered less than significant.

28.5% Below Business As Usual (BAU). Emissions from implementing projects will be calculated and compared to similar hypothetical development; if the implementing projects achieve a reduction of at least 28.5% with incorporation of mandatory and voluntary measures, they are considered less than significant.

4.1 MT Annual Per Capita Threshold. This is adopted from the SCAQMD efficiency-based standard, and based on an emission rate per population or employee (service population) projected for Year 2035; development which achieves emissions below this threshold is considered less than significant.

For the second criterion, in determining whether or not the Project would “conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases,” the analysis qualitatively demonstrates how the Project complies with the policies, programs and reduction measures set forth in AB 32. To that end, this analysis evaluates whether the Project incorporates and supports the reduction measures found in the AB 32 Scoping Plan, including implementing all applicable California Climate Action Task Force recommendations and all applicable California GHG Emission Reduction Strategies.

MASS EMISSIONS – 3,000 METRIC TONS PER YEAR

SCAQMD released a draft guidance document regarding interim CEQA GHG significance thresholds in October 2008. Therein, SCAQMD proposed a tiered approach, whereby the level of detail and refinement needed to determine significance increases with a project’s total GHG emissions. SCAQMD also proposed a screening level of 3,000 metric tons per year for commercial or residential projects,

under which project impacts are considered “less than significant.” The 3,000 metric ton of carbon dioxide equivalent (CO₂e) screening level was intended “to achieve the same policy objective of capturing 90 percent of the GHG emissions from new development projects in the residential/commercial sectors.”¹⁰ However, it should be noted that SCAQMD at this time only uses/recommends this project where it has permitting authority.

IMPROVEMENT FROM BASELINE – 28.5% BELOW BAU

In September 2006, Governor Arnold Schwarzenegger signed the California Global Warming Solutions Act of 2006, also known as AB 32, into law. The AB 32 Scoping Plan was adopted in 2009 which contains strategies to reduce GHG emissions. The Scoping Plan identified that emissions must be reduced by 169 MMT CO₂e, or approximately 28.5 percent of the State’s projected 2020 emissions level of 596 MMT CO₂e under a “business as usual” scenario. AB 32 commits the State to achieving the following:

- A reduction of GHG emissions to 2000 levels by 2010 (which represents an approximately 11 percent reduction from business as usual).
- A reduction of GHG emissions to 1990 levels by 2020 (approximately 28.5 percent below business as usual).
- A reduction of GHG emissions to 80 percent below 1990 levels by 2050.

To achieve these goals, AB 32 mandates that CARB establish a quantified emissions cap, institute a schedule to meet the cap, implement regulations to reduce statewide GHG emissions from stationary sources, and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved. Future targets and the BAU scenario established in support of AB 32 were based on data and standards available at the time the law was written (circa 2006), including actual and projected growth in Statewide population and economic activity, energy production, importation, and consumption rates, and energy efficiency standards (such as Title 24 of the California Building Code for buildings and applicable standards for motor vehicles), which are further discussed below.

The BAU emissions inventory developed under AB 32 was established based on applicable Title 24 energy efficiency standards at the time (Year 2005).¹¹ After adoption of AB 32, Title 24 standards were revised in 2008 to reduce energy consumption and thereby reduce GHG emissions and helping to meet AB 32 goals. Other measures not taken into account in setting AB 32 future targets include: the Renewable Portfolio Standard; Pavley regulations (AB 1493) which establishes GHG standards for new passenger vehicles thereby reducing GHG emissions; and the Low Carbon Fuel Standard (LCFS) established by CARB which sets carbon intensity standards for gasoline, gasoline alternative fuels and diesel fuel thereby reducing GHG emissions throughout the state. Since these reduction measures were not envisioned at the time of AB 32, the reduction achieved by these measures can be counted towards achieving the 28.5 percent reduction.

In addition, future targets were based on economic forecasts at the time of AB 32 development. During the time of AB 32 development, the current economic downturn was not anticipated. Due to the current economic conditions, the GHG reduction necessary to achieve AB 32 targets have been

¹⁰ SCAQMD, Board Meeting, December 5, 2008, Agenda No. 31, Interim GHG Significance Threshold Proposal – Key Issues/Comments Attachment D.

¹¹ 2005 Building Energy Efficiency Standards for Residential and Nonresidential Buildings. Publication number CEC-400-2006-015 - Revised September 2006. California Energy Commission.

revised/reduced.¹² However, as a conservative approach, the reduction target and CEQA threshold of 28.5% has not been revised as a result of the economic downturn.

An additional bill related to AB 32, SB 97, requires OPR, by July 1, 2009, to prepare, develop, and transmit to the Resource Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, including but not limited to, effects associated with transportation or energy consumption.

Laws promulgated in support of AB 32 detail policies and programs for California to reach the 2020 target of a return to 1990 emissions levels. The State has not developed a refined plan to reduce emissions beyond the 2020 target, so consistency with numeric targets during subsequent years, such as the build-out year for the Project of 2035, cannot be evaluated at this time. It should be noted that consistency with SB 375 is not suitable for significance, as the Project is on a sub-regional level, and SCS have not yet been developed.

PER CAPITA EMISSIONS - 4.1 METRIC TONS/PERSON PER YEAR

GHG efficiency metrics are also utilized as thresholds to assess the GHG efficiency of a project on a per capita basis or on a “service population” basis (the sum of the number of jobs and the number of residents provided by a project) such that the project will allow for consistency with the goals of AB 32 (i.e., 1990 GHG emissions levels by 2020 and 2035). GHG efficiency thresholds can be determined by dividing the GHG emissions inventory goal of the State, by the estimated 2035 population and employment. This method allows highly efficient projects with higher mass emissions to meet the overall reduction goals of AB 32, and is appropriate, because the threshold can be applied evenly to all project types (residential or commercial/retail only and mixed use). It should be noted that this per capita emission rate considers only the land use generating GHG emissions, such as stationary, area, and mobile source emissions. The SCAQMD has also proposed an efficiency based standard which is based on an emission rate per population or employee (service population) projected for Years 2020 and 2035.¹³ Overall, GHG reductions by the SB 375 target date of 2035 would be an additional 40 percent reduction from the 2020 targets, resulting in an efficiency threshold for plans of 4.1 MTCO₂e per year and an efficiency threshold at the project level of 3.0 MTCO₂e per year. Due to the lengthy build-out schedule for the Project, only the 2035 emissions were used to assess significance.

CONSISTENCY WITH APPLICABLE PLANS, POLICIES OR REGULATIONS

The County of Riverside is in the process of producing a GHG reduction plan that will help it to streamline its CEQA review of individual projects. The forthcoming GHG reduction plan will adequately address emissions at the plan level; therefore, the County will be able to determine that projects that are consistent with the plan will not have significant GHG-related impacts. The County is coordinating with CARB, SCAQMD, and the State Attorney General’s office to ensure that its inventories and reduction strategies will adequately address the County’s emissions. Until that process is complete, the County is proposing the use of GHG Mitigation Option Tables to evaluate the consistency of individual projects implemented under the Project with the State’s reduction goals. The Option Tables assign points for each feature and point values correspond to the minimum emissions reduction expected from

¹² Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document. California Air Resources Board. August 19, 2011.

¹³ <http://www.aqmd.gov/ceqa/handbook/GHG/2010/sept28mtg/wkqp15minutes.pdf>.

each. The menu of features allows flexibility for development projects to implement those measures which are appropriate to an individual project or site, while achieving the goal of comprehensive GHG reductions. Projects that garner at least 70 points for residential projects and 100 points for commercial projects, will be consistent with the State's reduction targets under AB 32, and determined to have a less than significant individual and cumulative impact on this criterion. It should be noted that the State's goal of a 28.5-percent reduction of BAU emissions applies to all emission sources. As noted above, the State has not yet developed detailed plans to achieve the 2050 GHG emissions goal; thus, precise consistency with long-term goals cannot be demonstrated at this time.

4.7.5 IMPACT ANALYSIS AND MITIGATION

METHODOLOGY

Global climate change refers to changes in average climatic conditions on earth as a whole, including changes in temperature, wind patterns, precipitation and storms. Historical records indicate that global climate changes have occurred in the past due to natural phenomena; however, some data indicate that the current global conditions differ from past climate changes in rate and magnitude; thus, the current changes in global climate have been attributed to anthropogenic activities by the Intergovernmental Panel on Climate Change (IPCC).¹⁴ CO₂ is the most-abundant GHG in the atmosphere, and represents 77 percent of total GHG emissions.¹⁵ GHGs are the result of both natural and anthropogenic activities. Forest fires, decomposition, industrial processes, landfills, and consumption of fossil fuels for power generation, transportation, heating, and cooking are the primary sources of GHG emissions. In the State of California, the transportation sector is the greatest source of GHG emissions, accounting for 38 percent of total GHG emissions in 2004, the latest year for which data are available.¹⁶

The methodology for preparing GHG inventories incorporates the protocols, methods, and emission factors found in the California Climate Action Registry (CCAR) General Reporting Protocol (version 3.1, January 2009), the Local Government Operations Protocol (LGOP) (version 1.1, May 2010), and the Draft Community-wide GHG Emissions Protocol under development by the AEP and the ICLEI.

The LGOP and the Draft Community-wide GHG Emissions Protocols categorize GHG emissions into three distinct "scopes" as a way of organizing GHG emissions, as follows:

- **Scope 1 Emissions** - All "direct" sources of community-wide GHG emissions¹⁷ from sources within the jurisdictional boundaries of the County. This includes fuel burned onsite in buildings and equipment such as natural gas or diesel fuel; transportation fuels burned in motor vehicles and airplanes; and wood-burning emissions from household hearths. For inventories of only

¹⁴ Intergovernmental Panel on Climate Change (IPCC), Fourth Assessment Report, The Physical Science Basis, Summary for Policy Makers, 2007.

¹⁵ IPCC, Fourth Assessment Report, Synthesis Report, 2007.

¹⁶ California Air Resources Board, Greenhouse Gas Emissions Inventory Data: 2004 GHG emissions by Sector, 2008.

¹⁷ A direct source is one where the action and the associated emissions are in the same location. For example, when a homeowner burns wood in his fireplace, he releases GHGs directly from his fireplace. An "indirect" source is one where the action that generates GHGs is separated from the where the GHGs are actually emitted. For example, when a building uses electricity, it necessitates the burning of coal (and resultant release of GHGs) by a coal-fired electricity generating station located elsewhere.

municipal operations, these emissions are limited to activities under the operational control of the local government.

- **Scope 2 Emissions** – Encompasses “indirect” sources of GHG emissions resulting from the consumption of purchased electricity, which is electricity used by the residents, businesses, and County’s facilities in the unincorporated areas. These emissions are “indirect” as the GHG emissions arise distantly, for example at an electric generating station in another county or even state. Thus they are distinguished from direct emissions (i.e., Scope 1 emissions), which are reported by the utility itself, in order to avoid double counting.
- **Scope 3 Emissions** is an optional reporting category that encompasses all other “indirect emissions” that are a consequence of activities of the County’s residents and businesses, but occur from sources out of the jurisdictional control of the local government. For example, emissions from trucks hauling waste under a County contract. The key to this category of emissions is that they must be “indirect or embodied emissions over which the local government exerts significant control or influence.” (CCAR 2010)

Because Scope 3 emissions are indirect emissions that are attributable to emissions sources that are not owned or controlled by Riverside County, they are not considered in this report. Scope 1 emissions are characterized and named in this report as “direct emissions.” Scope 2 emissions are characterized and named as “indirect source emissions.” The analysis herein is tailored to include all existing and projected emission sources within the County to provide, to the fullest extent feasible, a comprehensive analysis of GHG impacts.

Construction-related Methodology

Construction activities associated with implementing projects under the Project would emit GHGs over the course of development until build-out in 2035. The exact amount of emissions would be dependent on the particular construction equipment used and the length of the construction period for each individual implementing project undertaken.

Construction emissions were calculated using the California Emissions Estimator Model (“CalEEMod”) version 2011.1.1, which was used to assist in quantifying the GHG emissions from construction activities for the Project for a worst-case build-out year. Construction emissions are associated with construction equipment, construction-related vehicle trips, and off-gas emissions from painting and paving. There are typically four major construction phases for winery and residential development projects: demolition, site preparation, grading, and building construction. The building construction phase can be broken down into three subphases: building construction, architectural painting, and asphalt paving. GHG emissions from these construction phases are largely attributable to fuel use from construction equipment and worker commuting. Construction emissions were calculated for overall build-out of the Project by 2035. This includes residential construction, infrastructure improvements (e.g., water and sewage pipes, utilities, roads), demolition of existing structures, winery facilities, and equestrian facilities. The output values used in this analysis were adjusted to be Project-specific, based on usage rates of construction equipment, type of fuel, and construction schedule. These values were then applied to the construction phasing assumptions used in the criteria pollutant analysis to generate GHG emissions values for every 5 years, until 2035 build-out.

Operations-related Methodology

Emissions from the long-term operation of the implementing projects were assessed in accordance with the three quantitative thresholds.

Mass Emissions – 3,000 MTCO₂e per Year

Mobile source emission calculations associated with operation of the implementing projects utilize a projection of the trip rate and annual vehicle miles traveled (VMT) generated from vehicle traffic traveling to and from the Project area. As a result, a large increase in mobile source emissions is estimated to occur as the Project would attract more tourists to Wine Country. Tourists will come from all over Southern California including Los Angeles and San Diego Counties. A *Traffic Impact Study* was prepared for the Project by the County which estimated total mobile source activity from residents, employees, and visitors of the various development components in accordance with the Project.

Mobile source emission calculations associated with operation of the Project utilize a projection of annual VMT, which is derived from the Traffic Study. VMTs were modeled for vehicles traveling within the Project area including pass-by trips and vehicle trips originating outside of the Project area. Emissions from Project-generated vehicle trips were calculated using an emissions inventory model, which multiplies an estimate of annual VMTs by applicable EMFAC2007 emission factors. These values account for the daily and seasonal variations in trip frequency and length associated with winery retail land uses and residents traveling to and from work and other activities that require a commute. Net emission values are calculated based on the incremental increases from the existing conditions to the Project buildout conditions, and take into account current State and Federal standards that reduce GHG emissions from mobile sources (e.g., Pavley and Low Carbon Fuel Standard).

With regard to energy usage, the consumption of fossil fuels to generate electricity and to provide heating and hot water creates GHG emissions. Future fuel consumption rates are estimated based on specific square footage of the dwelling units, commercial/retail units, as well as predicted water supply needs of the implementing project.¹⁸ To calculate electricity generation for commercial wineries in Temecula Wine Country, Southern California Edison (SCE) electricity usage summary reports for a number of typical existing wineries provided from the County of Riverside were utilized. For natural gas consumption for the commercial wineries and from future residential homes, estimates were calculated within CalEEMOD using the Residential Appliance Saturation Survey (RASS) and the California Commercial Energy Use Survey (CEUS) data sets. These data sets provide energy intensities of different land uses throughout the state and different climate zones and were used to estimate GHG emissions from future land uses within the Project area.

Water and wastewater generated from the Project require energy to supply, distribute and treat. For commercial winery land uses, water usage summary reports for existing wineries were provided from the County of Riverside. These reports were used to estimate energy intensity and to calculate the energy usage related to water conveyance. Emission factors from the CCAR General Reporting Protocol (GRP), Version 3.1 are implemented in calculating the associated GHGs. Because water conveyance associated with the Project used energy usage rates in relation to the Project area and SCE emission factors, the emissions calculated are most representative of projected GHG emissions from future water usage.

¹⁸ Derived from utility bills for existing commercial wineries.

Emissions from solid waste handling generated from the Project is also accounted for in the GHG emissions inventory using CalEEMod. Waste disposal rates for individual land uses was used to estimate the amount of waste generated by the Project. GHG emissions from solid waste are calculated based on decomposition of waste into methane based on AP-42, EPA's Compilation of Air Pollutant Emission Factors.¹⁹

The wineries within the Project area would involve wine production (vinification) which includes harvesting, crushing, pressing, fermentation, clarification, aging, finishing, and bottling. Most of the emissions resulting from winemaking occur during fermentation. Fermentation is the process whereby the sugars in the juice undergo a reaction with yeast to form ethyl alcohol (ethanol) and CO₂. These are the primary compounds emitted during the wine-making process. The Santa Barbara County Air Pollution Control District has developed factors for CO₂ emissions from the fermentation of wine. These emission factors were used to estimate GHG emissions from the wineries proposed in this Project.²⁰

Vegetation is important in terms of global climate change, because it absorbs CO₂ from the atmosphere as part of the growing process. Agricultural areas build up a carbon store in their trees, shrubs and soil, creating carbon "sinks". When cleared, much of the stored carbon is rapidly converted back into CO₂ and released to the atmosphere. Concerns over the increasing levels of CO₂ have prompted an interest in agricultural and soil carbon sequestration. There are still a lot of questions as to the ability of agricultural systems to sequester carbon and agricultural sinks are almost impossible to identify and measure, due to spatial variability, variation over time, the slow rate at which carbon might be sequestered, and issues of how permanently carbon can be stored. However, estimates of changes in carbon sequestration were calculated in CalEEMod and are presented as part of the analysis of the Project.

Improvement from Baseline- 28.5% Below Business As Usual (BAU)

As discussed above, depending on the implementing project type, a checklist provided by the County of Riverside must score a minimum number of points based on implementing project type, to be considered 28.5% below "business as usual". For implementing projects, homes and commercial uses were evaluated in the GHG Option Tables. Implementation measures achievable per project type were totaled, and therefore concluded that a minimum of 70 points per residential project and 100 points per commercial project must be met. Homes and commercial projects are subject to this requirement, and GHG-reducing measures are quantified within the analysis to ensure that a reduction target of 28.5% has been achieved.

Per Capita Emissions- 4.1 tons/person per year

Based on the operation GHG emissions inventory, total emissions were divided by the total service population projected for year 2035. A significance determination was made evaluating the 2035 estimated per capita emissions compared to the per capita threshold of 4.1 tons per year.

¹⁹ AP-42, Compilation of Air Pollutant Emission Factors, has been published since 1972 as the primary compilation of EPA's emission factor information. It contains emission factors and process information for more than 200 air pollution source categories. <http://www.epa.gov/ttnchie1/ap42/>.

²⁰ Santa Barbara County Air Pollution Control District, 2010. Santa Barbara County APCD Winery Webpage <http://www.sbcapcd.org/eng/winery/winery.htm>.

PROJECT DESIGN FEATURES

The Project mandates implementing projects to incorporate various design features which will reduce the consumption of natural resources and the resultant GHG emissions. Generally, the County strives to lessen energy used in buildings and reduce residents' reliance on personal automobiles, which in turn produces reduced emissions. Toward these goals, the Project would require each individual project to meet a minimum level of 70 points for residential projects and 100 points for commercial projects on the corresponding GHG Mitigation Options Table to reduce GHG emissions. The Option Tables assign points for each option incorporated into a project as mitigation or a project design feature (collectively referred to as "feature"). The point values correspond to the minimum emissions reduction expected from each feature. The menu of features allows maximum flexibility and options for how development projects can implement the GHG mitigation measures.

At this point in the planning process, it is speculative to assume which of the possible project design features would be implemented for each individual implementing project within the Project area. However, the more common and easily implementable emissions-reducing features, such as those required by regulation or law, will be considered in the emissions inventory.

In addition, the following Project Design Features are incorporated into the Project to avoid, reduce or offset potential significant environmental impacts, as reflected in the Project proposal materials, including the proposed General Plan Amendment, Zoning Ordinance Amendment, and Temecula Valley Wine Country Design Guidelines:

1. The Project's amendment to County Zoning Ordinance No. 348 will require that the minimum lot size for special occasion facilities be 10 acres in the WC-WE zone, 20 acres in the WC-W zone, and 100 acres in the WC-E zone and a maximum of 5 guests shall be permitted per gross acre for these facilities. This would greatly reduce air quality impacts on neighboring properties.
2. Refer to Aesthetics/Light and Glare, Project Design Features #3, 4, 7, 8, and 9 (refer to Chapter 3.0 *Project Description*), which will require large minimum lot sizes from 5 to 20 acres and a minimum vineyard planting or equestrian land requirement of 75%. This will reduce the overall land use density and intensity of the Project site, resulting in fewer average daily trips which will in turn decrease air quality impacts in the Project area and surrounding communities.
3. The Project (revised SWAP Policy 1.8) will require that pending adoption of an updated Air Quality Element and Climate Action Plan (CAP), the County will ensure that new development selects greenhouse gas (GHG) reduction measures from the Option Tables to achieve the County's GHG emission reduction thresholds as set forth in the Greenhouse Gas Reduction Workbook (workbook). Alternatively, new developments may utilize other reduction mechanisms to achieve reduction thresholds as prescribe in the workbook.
- 4.

IMPACT ANALYSIS AND MITIGATION MEASURES

Impact 4.7-1: Greenhouse Gas Emissions

Threshold: *Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance?*

Determination: Potentially Significant Impact

Wine Country Community Plan Overview of Programmatic Impacts

Based on the discussion below, construction and operational activities allowed pursuant to the Project may result in potentially significant impacts related to GHG emissions.

Construction-related Impacts (of Implementing Projects)

Construction activities associated with the implementing projects would emit GHGs over the course of development until build-out in 2035. The exact amount of emissions would be dependent on the particular construction equipment used and the length of the construction period for each individual implementing project undertaken. Since it is speculative to estimate what equipment and the duration of construction will be for each implementing project, it would not be appropriate to calculate the exact emissions of GHGs from future construction activities in the Project area. Climate change is cumulative in nature and is analyzed in terms of tons per year.

Emissions of GHGs were calculated for the worst-case year of Project construction in CalEEMod. For purposes of this analysis, construction emissions were calculated in five-year increments to correspond with the expected rate of build-out. Emissions for each 5-year period take into account projected policies regarding construction waste diversion and anticipated advancement in equipment technology. Results of this analysis are presented in **Error! Reference source not found..7-2, Year 2035 Construction Greenhouse Gas Emissions**. As shown on Table 4.7-2, the average annual emissions would not likely exceed the GHG threshold of 3,000 metric tons, if an equal number of implementing projects are assumed to be constructed in each of the five-year spans. However, as the actual rate of construction cannot be accurately estimated, a plausible scenario of three times the average construction activity occurring in a single year was considered for determining potential mass emissions from construction under the Project. The GHG emissions resulting from this worst-case construction activity would exceed the SCAQMD's threshold, and result in a potentially significant impact. Therefore, the construction of the implementing projects would result in a potentially significant impact with regard to construction GHG emissions.

Operational Impacts (of Implementing Projects)

Project operations would result in a change in land use from relatively vacant land to residential, commercial or agricultural use. As a result, the Project would generate an increase in long-term GHG emissions from a number of sources as a result of development, including: mobile sources, residential and commercial building energy consumption, water consumption, waste generation, area sources, and wine production. Annual emissions were therefore calculated for build-out operational year of 2035, coincident with the long-term CARB and SCAG planning horizon. Emissions from "business as usual" scenarios for 2035 were also calculated.

Mass Emissions

There are many uncertainties involved in the quantification of GHGs from any individual implementing project. For example, it is reasonable to assume that most of the future patrons of the implementing projects currently engage in similar activities (working, shopping, attending appointments, and driving) that generate GHG emissions. It is not feasible to estimate with reasonable certainty how the levels of these activities compare to the predicted future usage rates. Thus, it is conservatively assumed that Project-related emissions are all net new emissions.

4.7 Greenhouse Gas Emissions

As mentioned previously in other sections, the Project area would develop a network of trails to promote hiking, equestrian and bicycle uses. These trails would encourage travel using non-motorized methods (horse, bicycle, walking) and would not be accessible to motorized vehicles. Therefore, operations of these trails would not likely contribute to an increase in overall GHG emissions. Use of non-motorized travel within the Project area would likely reduce GHG emissions due to the reduction in motorized vehicle trips and associated VMTs. However, in order to provide for a conservative analysis, this reduction is not included in the operational GHG emissions inventory.

Table 4.7-2
Year 2035 Construction GHG Emissions
Annual CO₂e (Metric Tons)

	2015	2015-2020	2020-2025	2025-2030	2030-2035
Small Winery	597	398	597	597	497
Medium Winery	804	804	802	966	1,287
Large Winery	587	979	587	587	587
Residential	562	562	562	562	562
Miscellaneous/ Demolition	990	990	990	990	990
Infrastructure	1,593	1,593	1,593	1,593	1,593
Equestrian Facility	347	347	347	347	347
Trail Network	87	87	87	87	87
Total per Period	5,567	5,760	5,567	5,728	5,950
Average per Year	1,113	1,152	1,113	1,146	1,190
Worst-case Likely Annual Activity^a	3,340	3,456	3,340	3,437	3,570
Annual Threshold	3,000	3,000	3,000	3,000	3,000
Above Threshold?	Yes	Yes	Yes	Yes	Yes
^a Worst-case annual emissions are conservatively assumed to include three times the annual average rate of construction in any singular year.					
Source: <i>Greenhouse Gas Impact Assessment</i> , November 2011 (Appendix E), Table 4.					

As shown in **Error! Reference source not found.**, *Mass Emissions 2035 Operational Greenhouse Gas Emissions*, in 2035 annual GHG emissions resulting from vehicle, electrical, and natural gas usage associated with operation of implementing Projects were estimated to be 286,298 MT CO₂e. from those sources in the Basin and an additional 111,534 MT CO₂e from sources in the San Diego Air Basin. San Diego travel emissions have been included in the analysis; however, are considered “Scope 3 GHG Emissions”; therefore it is not appropriate to be included in the total, since Riverside County lacks jurisdictional control over or input into highway projects and planning in San Diego County. The emissions estimates are based on compliance with the County’s requirement of achieving the minimum

4.7 Greenhouse Gas Emissions

mandated points on the GHG Option Tables. Even with these reductions, operation of implementing projects pursuant to the Project would exceed the SCAQMD screening threshold of 3,000 MT CO₂e per year, which is expected for a large program such as this Project, and impacts would be potentially significant, requiring further analysis.

Exhibit 4.7-3
Mass Emissions
2035 Operational GHG Emissions

	Total Number of Units	Project with Mitigation GHG Emissions – Annual CO ₂ e (Metric Tons)	
		Emissions per Unit	Total Emissions Calculated
Winery District			
Small Winery	30	199	5,975
Medium Winery	37	413	15,264
Large Winery	21	679	14,268
Residential Uses Total (DU)	739	18	13,235
Total Emissions	-	-	48,743
Equestrian District			
Small Winery	6	199	1,195
Residential Uses Total (DU)	199	18	3,564
Total Emissions	-	-	4,759
Residential District			
Small Winery	11	199	2,191
Residential Uses Total (DU)	978	18	17,516
Total Emissions	-	-	19,707
Total Land Use Emissions from Districts (MT/yr) ^a			73,209
Total Water Conveyance (MT/yr)			30,760
Total Mobile Source Emissions within SCAG (MT/yr)			182,329
Total Mobile Source Emissions in San Diego Air Basin (MT/yr)			111,534
Grand Total Emissions (without San Diego Travel) (MT/yr)			286,298
Total Emissions (with San Diego Travel) (MT/yr)			397,832
Annual GHG Threshold (MT/yr)			3,000
Project Year 2035 Operational Emissions (MT/yr)^b			286,298
Above the Mass Emissions Threshold?			Yes
^a Total Emissions from Land Uses from each District include emissions from sources of electricity, waste, natural, gas, and wine fermentation.			
^b San Diego travel emissions are considered “Scope 3 GHG Emissions”; therefore, it is not appropriate to be included in the total, since the County lacks jurisdictional control over or input into highway projects and planning in San Diego County.			
Note: Numbers may not add up exactly, due to rounding.			
Source: <i>Greenhouse Gas Impact Assessment</i> , November 2011 (Appendix E), Table 5.			

Improvement from Baseline

As discussed above, the operational emissions from development in accordance with the Project were calculated based on compliance with proposed policy SWAP 1.8 for achieving the minimum required credits on the County’s Option Tables. Exact details and combinations of options to be implemented will vary with each implementing project. Examples of the types of GHG-reducing measures include

4.7 Greenhouse Gas Emissions

- Enhanced building energy efficiency above Title 24;
- Enhanced insulation;
- Use of natural light;
- Increasing the use of energy efficient appliances and equipment;
- Reduced indoor and outdoor water demand.

The Option Tables provide points for features to reduce energy and water use. These features are consistent with the California Green Building Standards (CalGreen), the mandatory measures of which are required of to be adopted by local jurisdictions.²¹ Mandatory measures for homes include managing stormwater drainage during construction, meeting or exceeding the minimum standard design required by the California Energy Standards (exceed Title 24 by 15 percent), reducing indoor water use by at least 20 percent, installing automatic irrigation systems controllers.

Mandatory measures for commercial projects, include providing bicycle parking, using indoor fixtures that will reduce the overall use of potable water within the building by 20 percent, meet or exceed the minimum standard design required by the California Energy Standards (exceed Title 24 by 15 percent), implementing wastewater reduction, installing automatic irrigation system controllers, and undergoing verification to ensure that installer and special inspector qualifications are met. All of which further the GHG reduction effort.

Also included in the *Greenhouse Gas Impact Assessment* (Appendix E) are completed checklists consisting of possible point allocations for two hypothetical developments, one residential and one commercial. The options selected represent feasible strategies, relying on easily available technologies appropriate to the Project proposed zoning and standards, and are not intended to be prescriptive or limiting. Emissions were calculated for a sample residential and commercial (winery) implementing project built in accordance with these requirements, in addition to the “business as usual” scenario assuming no changes in mandatory or voluntary reductions since the time AB 32 was promulgated (2006). Results are shown in Table 4.7-4. Results for the full build-out of implementing projects under the Project are also shown.

As shown in Table 4.7-4, *Improvement from Baseline Emissions 2035 Operational GHG Emissions*, implementation of implementing projects that meet compliance with SWAP goals would result in a decrease of GHG emissions as compared to similar development built without incorporation of sustainable strategies. With the incorporation of policies SWAP 1.8 and 1.15, in addition to State-wide mandatory measures, implementing projects would result in a reduction in emissions of 32 percent, respectively compared to baseline development built in accordance with the minimum standards in place before AB 32 (so called “business as usual”). This exceeds the 28.5 percent below Business as Usual Reduction Target. Impacts from implementing projects would, therefore, be less than significant, as this analysis demonstrates the proposed policies would achieve an approximately 32 percent improvement from baseline conditions.

²¹ Per the 2010 California Green Building Standards Code.

Table 4.7-4
Improvement from Baseline Emissions
2035 Operational GHG Emissions

Source	Business as Usual	Compliant with Project	Percent Reduction
	MT/yr		%
One Residential DU	25	18	-29%
One Winery	1,125	679	-40%
Total of All Sources	421,476	286,298	-32%
At Least 28.5% Below "Business as Usual"			-32%
Meets 28.5% Reduction Target?			Yes
Source: <i>Greenhouse Gas Impact Assessment</i> , November 2011 (Appendix E), Table 6.			

Per Capita Emissions – 4.1 Tons/Person per Year

To allow for projected growth in the number of people and jobs expected in California while making progress towards the goal of reducing total Statewide emissions, it is appropriate to assess emissions on a per capita basis. If a project achieves the per capita threshold of 4.1 metric tons per service population or less, even if it represents net new emissions, the project’s impacts are considered less than significant.

As shown in Table 4.7-5, *Project Per Capita Emissions 2035 Operational GHG Emissions*, based on the total emissions calculated for full operation in 2035 over the projected 2035 Total Service Population, GHG emissions result in a per capita emissions rate of 5.8 metric tons and, therefore, exceed the 4.1 MT/yr per capita threshold. This is due primarily to the large number of visitor-generated emissions, such as fuel combustion in motor vehicles. It should be noted that visitors traveling to the Project area are not included as part of the Service Population. The Service Population, for purposes of this analysis, only includes residents (population) and employees in order to be consistent with regional growth forecasts prepared by SCAG which are submitted to the State for development of SB 375 targets and Sustainable Community Strategies.²² Visitors are not included as “service population” in the calculation, thereby artificially inflating the emission profile of each resident and employee. Impacts would therefore be potentially significant.

Infrastructure Impacts (of Implementing Projects)

As shown above, GHG emission related to infrastructure improvements are estimated in Table 4.7-2, *Year 2035 Construction GHG Emissions*. These emission calculations presented in Table 4.7-2 represent the worst-case scenario that would occur in any given year between 2020 and 2035. Taken separately from other construction emissions, infrastructure emissions would not incrementally increase emission beyond the SCAQMD threshold of 3,000 MT CO₂e/yr. Therefore, infrastructure emissions resulting from implementation of the Project would be less than significant. Details of this analysis are available in the Appendix E.

²² Southern California Association of Governments, *Technical Methodology and Related Processes for Estimating GHG Emissions*. March 2010. http://www.scag.ca.gov/sb375/pdfs/CEHD-TechMethodolgy032510_striethrough.pdf (accessed September 2011).

Table 4.7-5
Project Per Capita Emissions
2035 Operational GHG Emissions

Baseline GHG Emissions (MT)	421,476
Project with Mitigation ^a (MT)	286,298
2035 Total Service Population	49,774
Above or Below per Capita Threshold?	(MT/person/year)
Project 2035 Per Capita Emissions	5.8
Per Capita Threshold	4.1
Above Threshold	Yes
^a San Diego travel emissions are considered "Scope 3 GHG Emissions"; therefore, it is not appropriate to be included in the total, since the County lacks jurisdictional control over or input into highway projects and planning in SD County. Note: Calculation worksheets are included in Appendix E. Source: <i>Greenhouse Gas Impact Assessment</i> , November 2011 (Appendix E), Table 7.	

The long-term operation of these infrastructure improvements serving new residences, wineries, and agricultural developments are not individually calculated. The Project as a whole will result in an increase in total GHG emissions as compared to the existing condition and will result in emissions, when averaged over the new residents and employees, which exceed the regional per capita goal of 4.1 MT/yr. As such, to be conservative infrastructure-related long-term GHG emissions are considered potentially significant.

Summary of Applicable Existing Regulations and Policies

- a) *General Plan* Land Use Policies LU 1.5, LU 2.1, LU 4.1, LU 7.12, LU 8.1, LU 8.3, LU 10.1, LU 10.3, LU 10.4, and LU 12.1 through LU 12.4, Circulation (C) Policies C 1.2, C 1.7, C 4.1, C 4.9, C 9.2, C 11.2, C 11.4 through C 11.7, C 12.1 through C 12.3, C 13.2, C 17.3, and C 17.4, Multipurpose Open Space (OS) Policies OS 2.1 through OS 2.3, OS 2.5, OS 10.1, OS 11.1 through OS 11.3, OS 12.1, OS 16.1, OS 16.3, OS 16.7, OS 16.9, and OS 16.10, and Air Quality (AQ) Policies AQ 1.1 through AQ 1.4, AQ 1.7, AQ 3.2, AQ 3.4, AQ 4.1, AQ 4.2, AQ 4.4, AQ 5.1, AQ 5.2, AQ 5.4, AQ 7.4, AQ 8.4 through AQ 8.6, AQ 8.8, AQ 8.9, and AQ 10.1 through AQ 10.3 specifically address the reduction of GHG emission.
- b) Federal regulations intended to reduce GHG emissions include Climate Change Technology Program and US Environmental Protection Agency regulations (refer to Section 4.7.3, Regulatory Framework for further details regarding these regulations).
- c) State Regulations intended to reduce GHG emissions include California Ambient Air Quality Standards, Executive Order S-3-05, Assembly Bill 32, Senate Bill 97, Senate Bill 375, and Executive order S-13-08 (refer to Section 4.7.3, Regulatory Framework for further details regarding these regulations).
- d) The California Code of Regulations Title 24 Part 6 regulates building energy efficiency standards which in turn reduce s GHG emissions.
- e) The SCAQMD climate change policy includes air quality monitoring, evaluation, education, implementation of control measures to reduce emissions from stationary sources, permitting and inspection of pollution sources, enforcement of air quality regulations, and implementing measures to reduce emissions from motor vehicles
- f) County Regulations intended to reduce GHG emissions include Ordinance Nos. 706, 726, 748, 659, 655, 754, 859, 559, 625, 663, 695, 657, and 745 all of which directly or indirectly address

impacts related to global climate change (refer to Section 4.7.3, Regulatory Framework for further details regarding these regulations).

Mitigation Measures

GHG-1 All implementing projects shall use the following mitigation measures to reduce impacts from construction activities as related to construction equipment and vehicle exhaust emissions:

- The County shall require implementing projects to use low-emission and high energy efficiency construction equipment on site. Examples of low-emission and high energy efficiency equipment include use of EPA Tier 2 (or better) emission compliant construction equipment and use of alternative-fuel construction equipment (natural gas), if available.
- The County shall require implementing projects to include a statement on grading plans that all construction equipment will be tuned and maintained in accordance with the manufacturer's specifications.
- The County shall require implementing project to utilize electric- or diesel-powered equipment, in lieu of gasoline-powered engines, where feasible.
- The County shall require implementing projects to include a statement on grading plans that work crews shall shut off equipment when not in use. During smog season (May through October), the overall length of the construction period shall be extended, thereby decreasing the size of the area prepared each day, to minimize vehicles and equipment operating at the same time.
- The County shall require implementing projects to time construction activities so as to not interfere with peak hour traffic and minimize obstruction of through traffic lanes adjacent to the site; if necessary, a flag person shall be retained to maintain safety adjacent to existing roadways.
- The County shall require implementing projects to use EPA-rated engines of Tier 3 or better for construction equipment.
- As soon as electric utilities are available at construction sites, the County shall require implementing projects to supply the construction site with electricity from the local utility and all equipment that can be electrically operated shall use the electric utility rather than portable generators.

GHG-2 Individual implementing projects shall have the option to use the Option Tables or project-specific GHG analysis in order to demonstrate that GHG emissions from the implementing project are less than significant.

- Implementing projects which implement enough reduction measures from the Option Tables and achieve a 100/70 points shall be considered to be consistent with the County's GHG reduction goals for the Project area. Refer to *Temecula Valley Wine Country Greenhouse Gas Reduction Workbook* (refer to Appendix E of this Draft EIR).
- Those implementing projects that do not garnish the minimum points using the Option Tables (presented in the *Temecula Valley Wine Country Greenhouse Gas Reduction Workbook*, Appendix A [refer to Appendix E of this Draft EIR]) shall require quantification of project-specific GHG emissions and shall provide mitigation measures to reduce GHG emissions at least 28.5% below Business As Usual (BAU) emissions.

Conclusion

The individual implementing projects built in accordance with the Project would achieve reductions in GHG emissions consistent with the State's overall goal compared to building and planning practices in effect at the time AB 32 was promulgated. However, the construction and long-term operation of these new residences, wineries, and agricultural developments will result in an increase in total GHG emissions as compared to the existing condition, and will result in emissions, when averaged over the new residents and employees, which exceed the regional per capita goal of 4.1 MT/yr. The policies represent feasible mitigation, and no further mitigation measures are mandated. Therefore, the Project would result in a potentially significant and unavoidable impact with regard to GHG emissions in excess of mass emission and per capita thresholds.

Impact 4.7-2: Consistency with Applicable Plans, Policies, and Regulations

Threshold: *Would the project conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?*

Determination: *Less than Significant with Mitigation*

Wine Country Community Plan Overview of Programmatic Impacts

The implementing projects built in accordance with the Project would comply with the goals and policies established by Federal, State, Regional, and County regulations.

Policies of the SWAP have been established to promote and preserve the distinctive character of the Project area. The intensity of development in the project area is expected to consist of low-density residential and commercial uses with large lot sizes, and development would be limited to preserve the intent of the Temecula Valley Wine Country. Numerous policies provide features to reduce the emissions of GHGs. For example, SWAP 1.8 ensures that GHG reduction measures would be incorporated into each implementing project to achieve reduction targets. SWAP 1.15 encourages future residential tracts and parcel maps to cluster development in conjunction with on-site vineyards or equestrian land provided that the overall project density yield does not exceed one dwelling unit per five acres. Policies of the SWAP have been accounted for in the quantitative analysis of the Project above. These are consistent with policies under the County General Plan and consistent with State and Federal goals.

Construction-related Impacts (of Implementing Projects)

Construction-related impacts are anticipated to be less than significant in this regard (refer to programmatic discussion above).

Operational Impacts (of Implementing Projects)

Operational impacts are anticipated to be less than significant in this regard (refer to programmatic discussion above).

Infrastructure Impacts (of Implementing Projects)

Improvements to infrastructure within the Project are not anticipated to significantly impact plans, policies, or regulations related to GHG emission (refer to programmatic discussion above).

Summary of Applicable Existing Regulations and Policies

- a) *General Plan* Land Use Policies LU 1.5, LU 2.1, LU 4.1, LU 7.12, LU 8.1, LU 8.3, LU 10.1, LU 10.3, LU 10.4, and LU 12.1 through LU 12.4, Circulation (C) Policies C 1.2, C 1.7, C 4.1, C 4.9, C 9.2, C 11.2, C 11.4 through C 11.7, C 12.1 through C 12.3, C 13.2, C 17.3, and C 17.4, Multipurpose Open Space (OS) Policies OS 2.1 through OS 2.3, OS 2.5, OS 10.1, OS 11.1 through OS 11.3, OS 12.1, OS 16.1, OS 16.3, OS 16.7, OS 16.9, and OS 16.10, and Air Quality (AQ) Policies AQ 1.1 through AQ 1.4, AQ 1.7, AQ 3.2, AQ 3.4, AQ 4.1, AQ 4.2, AQ 4.4, AQ 5.1, AQ 5.2, AQ 5.4, AQ 7.4, AQ 8.4 through AQ 8.6, AQ 8.8, AQ 8.9, and AQ 10.1 through AQ 10.3 specifically address the reduction of GHG emission.
- b) Federal regulations intended to reduce GHG emissions include Climate Change Technology Program and US Environmental Protection Agency regulations (refer to Section 4.7.3, Regulatory Framework for further details regarding these regulations).
- c) State Regulations intended to reduce GHG emissions include California Ambient Air Quality Standards, Executive Order S-3-05, Assembly Bill 32, Senate Bill 97, Senate Bill 375, and Executive order S-13-08 (refer to Section 4.7.3, Regulatory Framework for further details regarding these regulations).
- d) The California Code of Regulations Title 24 Part 6 regulates building energy efficiency standards which in turn reduce s GHG emissions.
- e) The SCAQMD climate change policy includes air quality monitoring, evaluation, education, implementation of control measures to reduce emissions from stationary sources, permitting and inspection of pollution sources, enforcement of air quality regulations, and implementing measures to reduce emissions from motor vehicles
- f) County Regulations intended to reduce GHG emissions include Ordinance Nos. 706, 726, 748, 659, 655, 754, 859, 559, 625, 663, 695, 657, and 745 all of which directly or indirectly address impacts related to global climate change (refer to Section 4.7.3, Regulatory Framework for further details regarding these regulations).

Mitigation Measures

Refer to Mitigation Measures GHG-1 and GHG-2 above. No additional mitigation is necessary.

Conclusion

As mentioned above under Impact 4.7-1, construction and operation emissions of the Project would generate GHG emissions in excess of mass emission and per capita thresholds. However, the Project would result in a reduction of 32 percent from “business as usual” forecasted emissions levels based on Project build-out conditions. With the implementation of numerous policies of the SWAP and proposed zoning, the implementing projects would comply with the goals and policies established by AB 32, and would meet or exceed CalGreen requirements. With mitigation, the Project has a less than significant impact with respect to GHG-reducing plans, policies, and regulations.

4.7.6 CUMULATIVE IMPACTS

Threshold: *Would implementation of the proposed Wine Country Community Plan result in cumulative impacts?*

Determination: *Potentially Significant Impact*

In order to ensure consistency with the General Plan and SWAP goals, the County has developed the *Temecula Valley Wine Country Greenhouse Gas Reduction Workbook* (refer to Appendix E of this Draft EIR) to provide guidance and streamline CEQA review for implementing projects within the Project Area. This document serves to implement the GHG reduction policies and objectives of Riverside County. There are also regional and State plans, described above, including proposed AB 32 scoping plan, SCAG SB 375 targets and the State's regulatory framework.

Achieving the statewide AB 32 target of 28.5 percent is not required for individual projects to demonstrate consistency or the lack of a significant impact, as this target is statewide, and the majority of GHG emissions are generated from industrial sources (such as electrical generating plants) and mobile vehicle emissions, both of which are regulated by other state and federal agencies and are outside the control of the County of Riverside.

Executive Order S-3-05 includes a long-term goal of 80 percent GHG reduction by 2050, although the mechanisms for achieving this target have not been identified, and therefore, achievement of this goal is outside the control of the County of Riverside.

On September 23, 2010, CARB adopted Resolution 10-31, establishing SB 375²³ regional targets for all MPOs in California. The SB 375 target set for SCAG is a 13 percent reduction in GHG emissions from automobiles and light duty truck exhausts by 2035 (compared to SCAG's recommended target of 8 percent). As discussed above relative to AB 32 consistency, the Project implements reasonable and feasible measures to reduce GHG from stationary, mobile and indirect sources. The SB 375 targets, although they do not have binding regulatory effects upon the Project at this time, provide further context along with AB 32 targets noted above, relative to the Project's GHG impact.

²³ Senate Bill 375 (SB 375, Steinberg, Statutes of 2008) enhances California's ability to reach its AB 32 goals by promoting good planning with the goal of more sustainable communities. SB 375 requires CARB to develop regional greenhouse gas emission reduction targets for passenger vehicles. CARB is to establish targets for 2020 and 2035 for each region covered by one of the State's 18 metropolitan planning organizations (MPOs). Each of California's MPOs then prepare a "sustainable communities strategy (SCS)" that demonstrates how the region will meet its greenhouse gas reduction target through integrated land use, housing and transportation planning. Once adopted by the MPO, the SCS will be incorporated into that region's federally enforceable regional transportation plan (RTP). CARB is also required to review each final SCS to determine whether it would, if implemented, achieve the greenhouse gas emission reduction target for its region. If the combination of measures in the SCS will not meet the region's target, the MPO must prepare a separate "alternative planning strategy (APS)" to meet the target. The APS is not a part of the RTP. SB 375 also establishes incentives to encourage implementation of the SCS and APS. Developers can get relief from certain environmental review requirements under the California Environmental Quality Act (CEQA) if their new projects are consistent with a region's SCS (or APS) that meets the target (see Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28.).

No single project would in fact hinder the ability of the State of California to achieve its desired GHG goals reflected in AB32 and SB375, considering that residential/commercial sources represent a small percentage of State, national and global GHG, with the vast majority of development-related emissions (such as energy consumption and transportation fuels) regulated by CARB, EPA, SCAQMD and agencies other than local municipalities such as the County of Riverside.²⁴ One of the largest sources of global GHG, other than fossil fuel burning (from power plants and industrial sources) and transportation emissions, is deforestation, as this removes important “carbon sinks” from Earth’s surface, resulting in greater CO₂ retained in the atmosphere. In this regard, the U.S. is a global leader in maintaining and creating carbon sequestering forests.²⁵ With particular respect to the Project, the site has no “forest lands” and minimal carbon sequestering value, and this would be replaced with a large-lot rural landscape complete with extensive array of carbon sequestering trees throughout the estimated Project area.

With implementation of Project Design Features and mitigation measures the Project would be consistent with and not conflict with the statewide goals of AB 32 and regional targets under SB375. However, because measures implementing AB 32 and the SB 375 require further action by other state and federal agencies and implementation and effectiveness is not assured, as well as the continuing effects of past human-induced GHG emissions, the Project’s incremental contribution to climate change would remain potentially significant and unavoidable.

4.7.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation and compliance with the County’s policies will ensure that impacts from GHG emissions are minimized. However, construction and operation of implementing projects would create an increase in GHG emissions that are above SCAQMD’s draft mass emission thresholds and CARB’s per capita threshold.

Compliance with proposed County of Riverside SWAP policies will ensure consistency with the numeric GHG-reduction goals of AB 32 and be consistent with promulgated plans, policies, and regulations governing the reduction of GHG emissions. Because these features and measures would meaningfully reduce Project GHG emissions and are consistent with the state and local goals, the Project is supportive of the State’s goals regarding global climate change. However, Project impacts to global climate change, both at the Project level and cumulative level, are still potentially significant and unavoidable, due to the overall increase in emissions as compared to existing conditions.

²⁴ <http://climatechangeffects.info/> (accessed December 21, 2010).

²⁵ http://www.appinsys.com/GlobalWarming/GW_5GH_CO2Sources.htm (accessed December 21, 2010).



4.7 Greenhouse Gas Emissions

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