

CHAPTER 5 Total Estimated Reductions

In 2020, Riverside County is projected to emit a total of 10,268,937MT CO₂e without the incorporation of reduction measures. With implementation of the reduction measures discussed in Chapter 4, the County emissions for 2020 would be reduced to 6,035,904 MT CO₂e. The statewide reduction measures (the R1 Measures in Chapter 4) would reduce close to half of Riverside County’s emissions and make a substantial contribution toward reaching the 2020 reduction target. However, the County would need to supplement the state measures with the implementation of the local implementation measures (IM measures) discussed in Chapter 4.

5.1 Reductions from Statewide Measures

The following tables summarize the GHG reductions afforded to the County from the implementation of the statewide R1 reduction measures. Table 5-1 shows the annual MT CO₂e and the corresponding percent of emissions reduced for each of the R1 statewide measures described in Chapter 4 during the year 2020. Note that some R1 measures are not quantifiable and are not included in Table 1.

Table 5-1 Statewide Measures and Associated Emissions Reduced from the 2020 Inventory		
Transportation	MT CO₂e Reduced	% of Transportation Emissions
R1-T1 & R1-T2: Pavley Vehicle Efficiency*	265,500	9.9%
R1-T3: Low Carbon Fuel Standard	194,607	7.2%
R1-T4: Tire Pressure	10,038	0.2%
R1-T5: Low Rolling Resistance Tires	6,672	0.1%
R1-T6: Low Friction Oils	56,859	1.2%
R1-T7: Goods Movement Efficiency	25,085	0.5%
R1-T8: Aerodynamic Efficiency	29,311	0.6%
R1-T9: Medium/Heavy Duty Hybridization	21,709	0.4%
R1-T10: Regional SB 375 Targets	304,415	6.2%
Transportation Total	915,520	18.5%
Energy	MT CO₂e Reduced	% of Energy Emissions
R1-E1: RPS – 33% Renewable by 2020	364,913	12.9%
R1-E2 & R1-E3: Lighting	161,263	5.7%
R1-E4: Electrical Energy Efficiency	126,896	4.5%
R1-E5: Natural Gas Energy Efficiency	24,520	0.9%
R1-E6: Increased Combined Heat and Power	96,332	3.4%
R1-E7: Industrial Efficiency	79,993	2.8%
Energy Total	853,915	30.2%
Purchased Water	MT CO₂e Reduced	% of Water Emissions
R1-W1: RPS – 33% Renewable by 2020	33,172	19.0%
Purchased Water Total	33,172	19.0%
Agriculture	MT CO₂e Reduced	% of Agriculture Emissions
R1-A1: Methane Capture at Dairies	15,603	1.0%
Agriculture Total	15,603	1.0%
Total Reductions	1,818,210	17.7% of total
* Because Pavley I and Pavley II work in tandem for total reductions and would not have equivalent reductions if implemented independently of one another, they are shown together in this table.		

Table 5-2 compares the 2020 inventory (without the incorporation of any reduction measures) to the community-wide emissions with the statewide reductions. As shown in the table, the statewide

5.1 REDUCTIONS FROM STATEWIDE MEASURES

reduction measures would reduce 17.6 percent of the County’s total community wide annual emissions by the year 2020.

Table 5-2 Statewide Reduction Summary for 2020 Inventory				
	2020 BAU MT CO ₂ e	State Reductions MT CO ₂ e	2020 Reduced MT CO ₂ e	% Reduction
Transportation	4,950,296	915,520	4,034,776	18.4%
Energy	2,837,295	853,915	1,983,380	30.2%
Area Sources	442,033	0	442,033	0.0%
Purchased Water	175,344	33,172	142,172	19.0%
Solid Waste	341,145	0	341,145	0.0%
Agriculture	1,522,823	15,603	1,507,220	1.0%
Total	10,268,937	1,818,210	8,450,727	17.7%

Although the statewide measures would significantly reduce Riverside County’s emissions, they would not be enough to reach the established 2020 reduction target. The County’s reduction target was calculated as 15% below 2008 levels, which equates to 6,036,971 MT CO₂e. The statewide reduction measures would bring the County down to 8,450,727 MT CO₂e, which leaves 2,413,756 MT CO₂e to be reduced by measures implemented at the community level, see Table 5-3.

Table 5-3 Comparison to Reduction Target	
	MT CO ₂ e
2020 with State Reductions	8,450,727
2020 Reduction Target	6,036,971
Amount left to Reduce	2,413,756

The measures described in Chapter 4 would be implemented to reduce the remaining 2,413,756 MT CO₂e in order to reach the 2020 reduction target for Riverside County. The 2020 Reduction Target is an estimated 41.2% below the 2020 inventory. The statewide reduction measures work to reduce the County’s emissions by 17.7% from the 2020 inventory, as shown in Table 5-4.

Table 5-4 Percentage Reduction from 2020 Inventory	
	% from 2020 Inventory
2020 Reduction Target	41.2%
State Reduction Measures	17.7%
Amount left to Reduce	23.5%

The remaining 23.5 percent of emissions would be reduced through the implementation of the measures described in Chapter 4. Measures include several categories of reductions: the energy-efficiency measures that the County has incorporated since 2008; measures that implement policies included in the proposed General Plan Update; and additional measures that applicants could include as part of their project when filling out the Screening Tables.

5.2 Reductions from Implementation Measures

The IMs discussed in Chapter 4 would be implemented primarily through the Screening Tables for New Development and with General Plan policies. The measures go beyond the State measures to reduce GHG emissions in order to meet the 2020 reduction target. Table 5-5 summarizes the MT CO₂e and the corresponding percentage of emissions reduced for each of the R2 measures.

Table 5-5 R2 Measures and Associated Emissions Reduced from 2020 Inventory		
Transportation	MT CO₂e Reduced	% of Transportation Emissions
R2-T1: Employment Based Trip and VMT Reduction	387,095	7.9%
R2-T2: Increased Residential Density	281,934	5.7%
R2-T3: Mixed Use Development	216,284	4.4%
R2-T4: Preferential Parking	2,177	0.04%
R2-T5: Roadway Improvements – Signals, Flow	152,229	3.1%
R2-T6: Non-Motorized Transportation Facilities	33,536	0.7%
R2-T7: Expand Alternative Fuel Vehicle Use	69,429	1.4%
R2-T8: Anti-Idling Enforcement	37,315	0.8%
R2-T9: Increase Public Transit	253,313	5.1%
R2-T10: Employee Commute Alternative Schedules	73,320	1.5%
Transportation Total	1,503,361	30.6%
Energy	MT CO₂e Reduced	% of Energy Emissions
R2-E1: Residential Energy Efficiency Program	72,229	2.5%
R2-E2: Residential Renewable Energy Program	83,347	3.0%
R2-E3: Residential Retrofit Implementation Program	57,941	2.1%
R2-E4: Residential Renewable Retrofit Program	55,896	2.0%
R2-E5: Commercial Energy Efficiency Program	129,901	4.6%
R2-E6: Commercial/Industrial Renewable Program	35,481	1.3%
R2-E7: Commercial/Industrial Retrofit Program	38,471	1.4%
R2-E8: Induction Streetlight Retrofits	18,696	0.7%
Energy Total	491,962	17.4%
Area Source	MT CO₂e Reduced	% of Area Source Emissions
R2-L1: Electric Landscape Equipment	123,961	28.9%
R2-L2: No New Wood-burning Devices	68,559	16.0%
R2-L3: Mandatory Curtailment Days	13,730	3.2%
Area Source Total	206,251	48.1%
Water	MT CO₂e Reduced	% of Water Emissions
R2-W1: Water Use Reduction Initiative	28,283	16.2%
R2-W2: Increase Reclaimed Water Use	4,582	2.6%
Water Total	32,865	18.8%
Solid Waste	MT CO₂e Reduced	% of Solid Waste Emissions
R2-W1: County Diversion Program	159,133	46.6%
R2-W2: Construction Diversion Program	13,687	4.0%
Solid Waste Total	172,821	50.7%

With the statewide reduction measures and the implementation of the IMs, Riverside County would reduce its community-wide emissions to a level below the established 2020 reduction target. Table 5-6 summarizes the 2020 inventory emissions, the GHG reductions associated with the statewide and IMs, and the reduced 2020 emissions.

5.3 REDUCED 2020 COMMUNITY-WIDE EMISSIONS INVENTORY

Table 5-6 IM Reduction Summary for 2020 Inventory					
	State Reductions		IM Reductions	Reduced 2020	
	2020 MT CO ₂ e	MT CO ₂ e	MT CO ₂ e	MT CO ₂ e	% Reduction
Transportation	4,950,296	915,520	1,503,361	2,529,432	48.9%
Energy	2,837,295	853,915	491,962	1,485,129	47.7%
Area Sources	442,033	0	211,843	230,190	47.9%
Purchased Water	175,344	33,172	32,865	109,021	37.8%
Solid Waste	341,145	0	13,687	174,134	49.0%
Agriculture	1,522,823	15,603	0	1,507,220	1.0%
TOTAL	10,268,937	1,818,210	2,415,693	6,035,126	41.2%

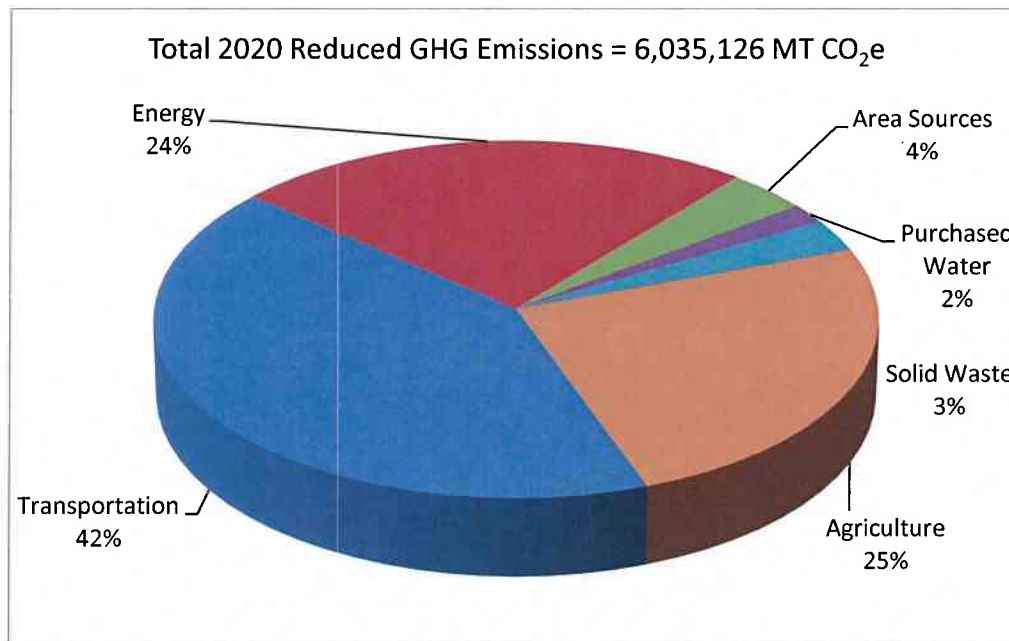
5.3 Reduced 2020 Community-Wide Emissions Inventory

With the implementation of GHG reduction measures, Riverside County is projected to reduce its emissions to a total of 4,233,811 MT CO₂e, which is 1,846 MT CO₂e below the 2020 reduction target. This is a decrease of 41.2 percent from the County’s 2020 BAU emissions inventory and 15 percent from the 2008 emissions. The reduction measures reduce GHG emissions from all sources of community-wide GHG emissions including transportation, energy, area sources, water, solid waste, and agriculture. The following section describes the reduced emissions by source for the year 2020.

Emissions by Source

The emissions by source for the reduced 2020 inventory were calculated by applying a percent reduction to the 2020 emissions for each reduction measure. Table 5-7 summarizes the reduced 2020 County emissions of CO₂e as broken down by emissions category. Figure 5-1 is a graphical representation of Table 5-7. A detailed breakdown of reduced 2020 emissions by category is available in Appendix D of this CAP.

Table 5-7 Reduced 2020 GHG Emissions by Source	
Category	Metric tons of CO ₂ e
Transportation	2,529,432
Energy	1,485,129
Area Sources	230,190
Purchased Water	109,021
Solid Waste	174,134
Agriculture	1,507,220
Total	6,035,126

Figure 5-1 Reduced 2020 GHG Emissions Generated by Source

5.4 Reduced 2035 Community-Wide Emissions Inventory

Beyond 2035, Riverside County's GHG emissions would reduce with the continued implementation of the 2020 reduction strategies, expansion of the transit system according to the forthcoming SCAG RTP, and increased stringency of state reduction measures. In addition to the 2020 reduction measures, the following assumptions were included in the reduced 2035 GHG emissions:

- Pavley vehicle efficiency standards would continue beyond 2035 at a similar rate.
- The low carbon fuel standard would increase from 10 percent to 12 percent.
- Continued expansion of medium and heavy duty vehicle hybridization.
- Expanded SB 375 target with SCAG RTP/SCS implementation.
- 0.4% reduction in transportation emissions associated with CA High Speed Rail project.
- 30% increase in residential density post 2020.
- 10% increase in mixed use development post 2020.
- Expanded preferential parking programs.
- Expanded signal synchronization and traffic flow management programs.

5.4 REDUCED 2035 COMMUNITY-WIDE EMISSIONS INVENTORY

- 60% increase in facilities for bicycle and pedestrian transportation post 2020.
- Double the number of electric vehicles post 2020.
- Expanded transportation network post 2020.
- Increased percent of RPS to 39% by 2035.
- Continued regulations for energy efficient lighting.
- Increased electrical and natural gas energy efficiency post 2020.
- Expanded combined heat and power systems.
- Increased industrial efficiency by 60% post 2020.
- New homes achieve energy efficiency 25% beyond current Title 24.
- 65% participation of new home with renewable energy systems.
- 50% of existing homes undergo energy efficiency and/or renewable energy retrofits.
- 25% of new commercial development installs renewable energy systems.
- 60% of existing commercial developments undergo energy efficiency retrofits.
- Water conservation expands to 30%.
- Reclaimed water use increases to 10%
- Construction waste diversion doubles post 2020.
- Methane capture at dairies doubles post 2020.

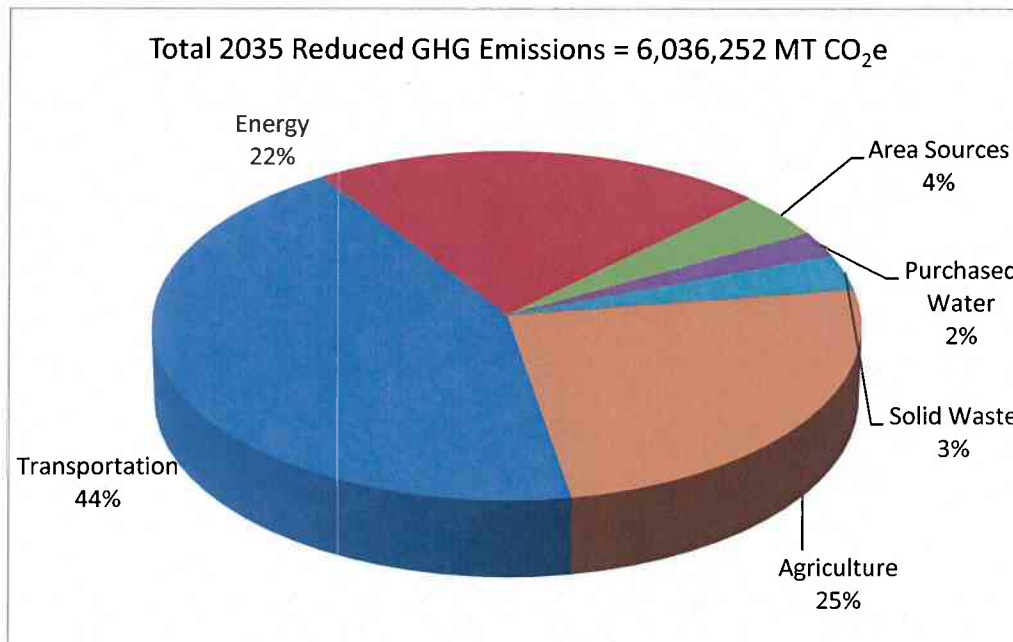
With the continued implementation of the Screening Tables for New Development and predicted future developments at the state level, Riverside County's 2035 emissions would be reduced down to a total GHG emissions inventory of approximately 6,036,252 MT CO₂e, this represents a 53 percent decrease from the 2035 BAU emissions inventory and is below the 2020 reduction target. The assumptions described above represent one possible scenario for achieving reductions beyond 2020. Future inventory updates, monitoring of reduction measures, and updating policies will be necessary to create a successful post 2020 plan.

Emissions by Source

The emissions by source for the 2035 reduced inventory were calculated by applying a percent reduction to the 2035 emissions inventory for each reduction measure. Table 5-8 summarizes the 2035 County emissions of CO₂e as broken down by emissions category. Figure 5-3 is a graphical representation of Table 5-8. A detailed breakdown of the reduced 2035 emissions by category is available in Appendix D of this CAP.

Table 5-8 Reduced 2035 GHG Emissions by Source	
Category	Metric tons of CO ₂ e
Transportation	2,622,357
Energy	1,326,416
Area Sources	256,482
Purchased Water	146,121
Solid Waste	198,061
Agriculture	1,485,815
Total	6,036,252

Figure 5-3 Reduced 2035 GHG Emissions by Source



5.5 Emissions Summary

With the implementation of the reduction measures outlined in Chapter 4, Riverside County would reduce its emissions to a level below the 2020 reduction target calculated in Chapter 3. This represents a 41% decrease from the 2020 BAU inventory and is consistent with the State’s GHG reduction goals. Table 5-9 summarizes the existing 2008 emissions, the 2020 BAU emissions inventory, and the reduced 2020 emissions.

5.5 EMISSIONS SUMMARY

Table 5-9 2020 GHG Emissions Comparison				
Source Category	Metric tons of CO₂e			
	2008	2020 BAU	Reduced 2020	% Reduced
Transportation	2,850,520	4,950,296	2,529,432	48.9%
Energy	1,585,565	2,837,295	1,485,129	47.7%
Area Sources	269,181	442,033	230,190	47.9%
Purchased Water	152,473	175,344	109,021	37.8%
Solid Waste	214,149	341,145	174,134	49.0%
Agriculture	2,030,431	1,522,823	1,507,220	1.0%
Total	7,102,319	10,268,937	6,035,126	41.2%
Emission Reduction Target		6,036,971	6,036,971	
Below Reduction Target?		No	Yes	
Note: Mass emissions of CO ₂ e shown in the table are rounded to the nearest whole number. Totals shown may not add up due to rounding.				

Beyond 2020, these reduction measures would continue to reduce emissions particularly from new development projects and transportation. Without reduction measures the County's growth beyond 2020 would result in more GHG emissions, however, these emissions can be offset with the implementation of the Screening Tables for New Development and the General Plan's policies to reduce GHG emissions. Table 5-10 summarizes the County's existing 2008 emissions, anticipated 2035 emissions inventory, and reduced 2035 emissions.

Table 5-10 2035 GHG Emissions Comparison				
Source Category	Metric tons of CO₂e			
	2008	BAU 2035	Reduced 2035	% Reduced
Transportation	2,850,520	6,461,733	2,622,357	59.4%
Energy	1,585,565	3,617,816	1,326,416	63.3%
Area Sources	269,181	529,395	256,482	51.6%
Purchased Water	152,473	293,083	146,121	50.1%
Solid Waste	214,149	424,125	198,061	53.3%
Agriculture	2,030,431	1,522,823	1,485,815	2.4%
Total	7,102,319	12,848,975	6,036,252	53.0%
Emission Reduction Target		6,036,971	6,036,971	
Below Reduction Target?		No	Yes	
Note: Mass emissions of CO ₂ e shown in the table are rounded to the nearest whole number. Totals shown may not add up due to rounding.				

CHAPTER 5 TOTAL ESTIMATED REDUCTIONS

Table 5-10 shows that the continued implementation of the reduction measures combined with the anticipated increased stringency of state reduction measures would reduce 2035 emissions by 53 percent, which is below the 2020 reduction target. The State’s ambitious reduction target for the year 2050 is to reduce emissions 80% below 1990 emissions. In order to reach this target, technology must advance significantly and more stringent measures for building and vehicle efficiency must be implemented. While the measures included in this CAP would provide a plan for the County to reduce emissions enough to meet the 2020 target and experience further reductions through to 2035, the CAP would need to be updated periodically in the future in order to update these measures.

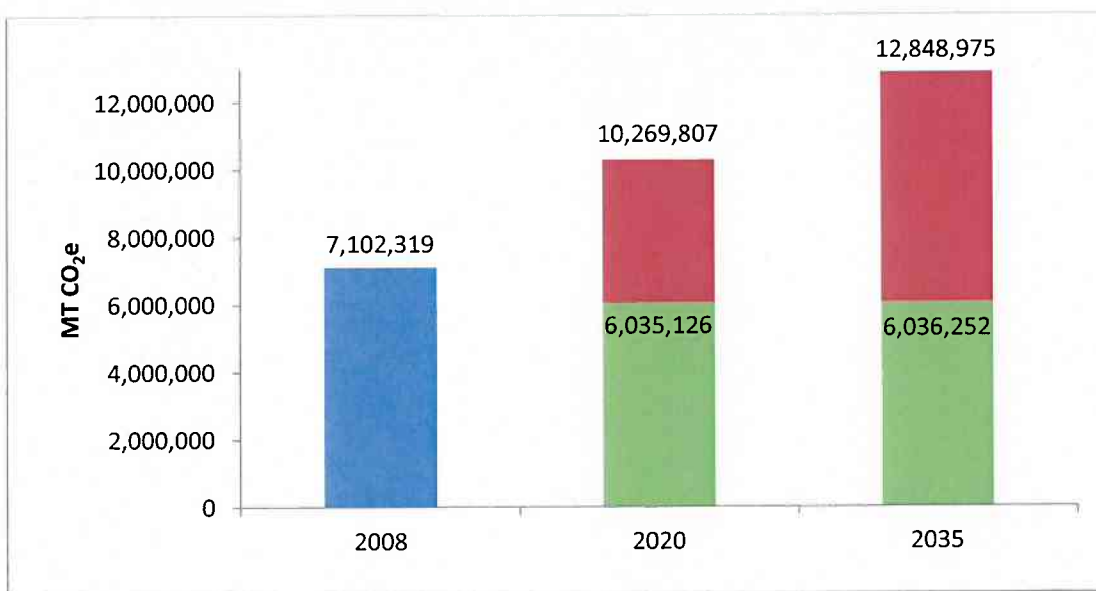
5.5 EMISSIONS SUMMARY

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CHAPTER 6 **Conclusions**

This CAP serves as a guide to help the County implement the objectives of conserving resources and reducing GHG emissions. This document also serves as a technical resource for the proposed update of the County’s current General Plan and other land use related documents that may require evaluation and documentation of GHG emissions. Figure 6-1 show a comparison between the emission inventories, including the reduced 2020 BAU and 2035 BAU inventories. The blue bar represents the calculated GHG inventory for Riverside County for 2008. The red bars show the projected growth in GHG emissions in 2020 BAU and 2035 BAU based on the General Plan growth rates. The green bars demonstrate the reduced inventories after the implementation of the statewide and community reduction measures described in Chapter 4.

Figure 6-1 Riverside County GHG Emissions by Year



This CAP sets a target to reduce community-wide GHG emission emissions by 15% from 2008 levels by 2020 consistent with the State reduction goals in AB 32. The CARB Scoping Plan outlines the reduction strategies designed to meet the statewide reduction goal of AB 32. The County has a reduction strategy as described in Chapter 4 that would meet the State reduction goal. Reduction measures provided herein would ensure that Riverside County meets the AB 32 reduction target of reducing to 15% below 2008 levels (reduce down to 6,036,971 MT CO₂e) by 2020. Such programs include strengthening the County’s existing programs as well as implementing the Screening Tables for New Development. In some cases, implementation will require the cooperation of other agencies, private businesses, and residents. The success of these measures will be tracked using indicators and targets such as those described in this CAP. Even with the anticipated growth, the modernization of vehicle fleets, combined with the continued implementation of the proposed measures, will reduce GHG emissions by approximately 4,233,811 MT CO₂e from 2020 levels. Therefore, the implementation of the State (R1) measures combined with the County’s R2 and R3 measures will reduce GHG emissions down to 6,035,126 MT CO₂e by year 2020, which is 1,846 MT CO₂e below the reduction target.

5.5 EMISSIONS SUMMARY

Beyond 2020, Riverside County would continue implementation of the Screening Tables. During this time, the reduction measures implemented through the Screening Tables would continue to reduce GHG emissions from new development. Additionally, it is assumed that the State measures would be reinforced post-2020 to further reduce emissions. With these assumptions, the County's emissions would decrease to a level below the 2020 reduction target by 2035. Continued implementation of this CAP in post 2020 years is discussed in Chapter 7.

CHAPTER 7 Implementation

This section describes implementation steps for the CAP to support achievement of the GHG reduction goals for the community at large. Success in meeting the County’s GHG emission reduction goal will depend on cooperation, innovation, and participation by the County and residents, businesses, and government entities in the County’s land use jurisdiction with regards to implementing the CAP. This section outlines key steps that the County will follow for the implementation of this CAP.

7.1 STEP 1—Administration and Staffing

The County will appoint an Implementation Coordinator to coordinate implementation of this CAP. The Implementation Coordinator will oversee and document implementation of the reduction measures and provide periodic monitoring of emissions.

The Implementation Coordinator will, at a minimum, include the following departments, but will be expanded as needed to ensure coordinated leadership in plan implementation:

- County Executive Office (EO)—the executive office can provide economic, financial, and administrative guidance and support to the Implementation Coordinator.
- Transportation Land Management Agency (TLMA)—the County’s Land Use umbrella agency will provide coordination between the various land use divisions, including, but not limited to Building & Safety and Transportation and will assist in the implementation of New Development Implementation Measures.
- County Economic Development Agency-Facilities Management Division—this County division administers the energy efficiency improvements to County owned facilities being constructed as a result of the Energy Efficiency and Conservation Block Grant (EECBG) funding.
- Planning Division – Planning can provide expertise in the project entitlement process and provide long-term planning support.

7.2 STEP 2—Financing and Budgeting

The Implementation of the CAP will require creative, continuing, and committed financing in order to work. Local, regional, state, and federal public sources of funding will be needed along with the substantial involvement of the private sector. The County Implementation Plan will take into account the costs and staff resources throughout implementation of the plan as well as the financial benefits and cost savings. The following different financing options will be explored by the County:

- State and Federal Grants and Low-interest Loans —As described below there are a variety of grant and loan programs that exist in various sectoral areas.
- Support from Local Businesses, Non-Profits, and Agencies—Opportunities for public/private partnerships (like the SCE partnerships) exist to provide cooperation on many aspects of the CAP including energy efficiency retrofits, waste minimization, transit promotion, and education.

7.2 STEP 2—FINANCING AND BUDGETING

- Self-Funding and Revolving Fund Programs—Innovative programs to fund residential solar investments.
- Agreements with Private Investors—Energy service companies and other private companies can finance up-front investments in energy efficiency and then be reimbursed through revenues from energy savings.
- Taxes and Bonds—Various local governments have used targeted finance instruments for solar, transportation, vehicle improvements, and landfill methane controls.

Given that financing is vital to implementing many of the CAP measures, a review of current and potential funding sources was completed for the different sectors covered in this CAP and is presented below to help early phase implementation of the CAP. Whether at the federal, western regional or state level, it appears likely that there will be some form of a “cap and trade” system in place within several years. This system, depending on its particular character, is likely to influence energy prices (such as for electricity, natural gas, and vehicle fuels), and may make currently cost-ineffective measures more economically feasible in the medium term and allow the financing of a broader range of plan measures.

Energy Efficiency and Renewable Energy Financing

Federal Energy Efficiency Community Block Grants (EECBG). As part of the stimulus package (the “American Recovery and Reinvestment Act” or ARRA), signed into law by President Obama in spring 2009, block grants are available for energy efficiency planning and improvements in the building, transportation, and other sectors. The purpose of the EECBG Program is to assist eligible jurisdictions in creating and implementing strategies to: reduce fossil fuel emissions in a manner that is environmentally sustainable and that maximizes, to the greatest extent practicable, benefits for local and regional communities; reduce the total energy use of the eligible entities; and improve energy efficiency in the building sector, the transportation sector, and other appropriate sectors. Eligible activities include: development of an energy efficiency and conservation strategy; technical consultant services; residential and commercial building energy audits; financial incentive programs; energy efficiency retrofits; energy efficiency and conservation programs for buildings and facilities; development and implementation of certain transportation programs; building codes and inspections; certain distributed energy projects; material conservation programs; reduction and capture of methane and greenhouse gases from landfills and dairies; efficiency traffic signals and street lighting; renewable energy technologies on government buildings; and other appropriate activity.

Federal Tax Credits for Energy Efficiency. On October 3, 2008, President Bush signed into law the “Emergency Economic Stabilization Act of 2008.” This bill extended tax credits for energy efficient home improvements (windows, doors, roofs, insulation, HVAC, and non-solar water heaters). These residential products during 2008 were not eligible for a tax credit, as previous tax credits had expired at the end of 2007. The bill also extended tax credits for solar energy systems and fuel cells to 2016. New tax credits were established for small wind energy systems and plug-in hybrid electric vehicles. Tax credits for

builders of new energy efficient homes and tax deductions for owners and designers of energy efficient commercial buildings were also extended.

See: http://www.energystar.gov/index.cfm?c=products.pr_tax_credits.

SCE Energy Efficiency / Renewable Energy Incentives

- Online or mail-in Home Energy Efficiency Survey. This 15-minute survey gives helpful energy-saving tips that will also help the environment. The questions and tips are tailored are about residential energy usage.
- Rebate programs for residential use include; lighting, appliances, heating and cooling, multifamily housing, pool, solar leadership and customer generation.
- Energy Centers provide free information, training, and support to make important Energy Management and energy efficiency choices.
- SCE Energy Manager offers online access to usage information and detailed cost analyses business energy use.
- Financial Offerings include on-Bill Financing, Zero-interest financing towards the purchase and installation of qualifying energy efficient equipment for commercial, industrial and agricultural customers.
- Regulation & Compliance Support “The Cool Planet Project” assists customers with recent installations or efficiency projects resulting in excess of one million kWh of energy in joining the Climate Registry.
- Solar Leadership helps create a cleaner energy future with innovative solutions that make it possible for you to join the solar movement.
- Self-Generation provides financial incentives for installing self-generation equipment to meet all or a portion of facility’s energy needs.
- Specialized Services for Facilities:
 - New Buildings-Receive technical assistance in the design and construction of new energy efficient buildings.
 - Savings by Design: New construction builders and buyers can receive design assistance, owner incentives, and design team incentives.
 - California Advanced Homes - Incentives, design assistance, and technical education and services to encourage home builders to build home that exceed California’s Title 24 code standards by at least 15%.
 - Full-service solutions are available to qualifying customers to receive assistance in identifying and evaluating energy efficiency opportunities within existing buildings.
 - Retro Commissioning - Receive assistance to improve the bottom line in existing building’s operations through specialized services to detect inefficiencies in complex building systems, and to determine optimum operating conditions.

7.2 STEP 2—FINANCING AND BUDGETING

- Heating Ventilation & Air Conditioning - Lower operating costs and increase equipment life through proper HVAC installation and regular maintenance. Future programs will focus on two key components:
- A/C Quality Maintenance, and
- A/Q Quality Installation.

AB 811 Financing Districts. AB 811 permits the creation of assessment districts to finance installation of distributed generation renewable energy sources or energy efficiency improvements that are permanently fixed to residential, commercial, industrial, or other real property. Riverside County's partnership with WRCOG in creation of the Energy Efficiency and Water Conservation Program allows home and business owners to utilize this type of financing program and avoid upfront costs associated with energy system installations. Financing is repaid through the property tax bill and repayment obligations remain with the property when it is sold to a new owner.

California Energy Commission (CEC) Energy Efficiency Financing. The CEC offers up to \$3 million per application in energy efficiency financing and low interest loans to cities and counties for installing energy-saving projects. Examples of projects include: lighting systems, pumps and motors, streetlights and LED traffic signals, automated energy management systems/controls, building insulation, energy generation including renewable and combined heat and power projects, heating and air conditioning modifications, and waste water treatment equipment.

See <http://www.energy.ca.gov/efficiency/financing/>

California Energy Commission Bright Schools Program. This is a collaborative project of the CEC, California Conservation Corps, local utility companies and other qualifying energy service companies to assist schools in undertaking energy efficiency projects. Project staff will guide schools through identifying and determining a project's feasibility, securing financing for the project, and purchasing and installing the new energy efficient equipment.

See <http://www.energy.ca.gov/efficiency/brightschools/index.html>

Transportation Financing

Federal Energy Efficiency Community Block Grants (EECBG). As described above, eligible activities include development and implementation of certain transportation programs and efficiency traffic signals and street lighting.

Regional Transportation Improvement Program (RTIP). The Regional Transportation Improvement Program (RTIP) is funded from 75 percent of the funds made available for transportation capital improvement projects under the State Transportation Improvement Program (STIP). This program targets urban projects that are needed to improve transportation within the region. The Southern California Association of Governments (SCAG) and RCTC recommends to the California Transportation Commission (CTC) the selection of these projects, which can include state highway improvements, local roads, public transit, intercity rail, grade separations, and more.

Interregional Improvement Program (IIP). The Interregional Improvement Program (IIP) is funded from 25 percent of the funds made available for transportation capital improvement projects under the STIP. This program targets projects that are needed to improve interregional movement of people and goods. Caltrans recommends to the CTC the selection of these projects, which can include state highway improvements, intercity passenger rail, mass transit guideways, or grade separation projects.

Waste Reduction Financing

California Integrated Waste Management Board Grants and Loans. The CIWMB offers funding opportunities authorized by legislation to assist public and private entities in the safe and effective management of the waste stream. See <http://www.ciwmb.ca.gov/grants/> for more details.

Water Conservation and Treatment Financing

Clean Water State Revolving Funds. CWSRFs fund water quality protection projects for wastewater treatment, nonpoint source pollution control, and watershed and estuary management. CWSRFs have funded over \$74 billion, providing over 24,688 low-interest loans to date.

See <http://www.epa.gov/owm/cwfinance/cwsrf/index.htm> for more details.

CWSRF's offer:

- **Low Interest Rates, Flexible Terms**—Nationally, interest rates for CWSRF loans average 2.3 percent, compared to market rates that average 5 percent. For a CWSRF program offering this rate, a CWSRF funded project would cost 22 percent less than projects funded at the market rate. CWSRFs can fund 100 percent of the project cost and provide flexible repayment terms up to 20 years.
- **Funding for Nonpoint Source Pollution Control and Estuary Protection**—CWSRFs provided more than \$167 million in 2009 to control pollution from nonpoint sources and for estuary protection, more than \$3 billion to date.
- **Assistance to a Variety of Borrowers**—The CWSRF program has assisted a range of borrowers including municipalities, communities of all sizes, farmers, homeowners, small businesses, and nonprofit organizations.
- **Partnerships with Other Funding Sources**—CWSRFs partner with banks, nonprofits, local governments, and other federal and state agencies to provide the best water quality financing source for their communities.

7.3 STEP 3—Timeline and Prioritization

The County will develop an implementation schedule based on the completion of the full cost effectiveness analysis. Prioritization will be based on the following factors:

7.3 STEP 3—TIMELINE AND PRIORITIZATION

- Cost effectiveness;
- GHG reduction efficiency;
- Availability of funding;
- Level of County Control;
- Ease of implementation; and
- Time to implement.

In general consideration of these factors, the following is an outline of key priorities for three (3) phases starting in 2012 through 2020.

- Phase 1 (2012-2014): Development of key ordinances, completion of key planning efforts, implementation of most cost-effective measures, and support of voluntary efforts.
- Phase 2 (2014–2017): Continued implementation of first tier measures, implementation of second tier measures, and implementation of key planning outcomes from Phase 1.
- Phase 3 (2017–2020): Continued implementation of first and second tier measures, implementation of third tier of measures.

Because the goals of this CAP are aggressive, success in meeting the CAP goals depend on some flexibility in the GHG reduction actions. The County is committed to flexibility in implementing the reduction measures and meeting the goals of this CAP. Many of the reduction measures in this Plan may be implemented through a menu of options. The goals of each reduction measure can often be achieved through a variety of means, especially those related to building energy efficiency. For example, the County will develop energy efficient design programs (measures R2-E3 and R2-E4). Compliance with the energy efficient design programs can be achieved through many combinations of actions including (but not limited to): installing energy efficient appliances, lighting, and HVAC systems; installing solar panels and solar water heaters; siting and orienting buildings to optimize conditions for natural heating, cooling, and lighting; installing top-quality windows and insulation; and incorporating natural shading, skylights, and reflective surfaces. Table 7-1 presents the potential timeline and phasing schedule for the GHG reduction measures.

Table 7-1 GHG Reduction Measure Timeline and Phasing Schedule	
Reduction Measure	Phase
Transportation	
R2-T1: Employment Based Trip and VMT Reduction	1, 2, 3
R2-T2: Increased Residential Density	1, 2, 3
R2-T3: Mixed Use Development	1, 2, 3
R2-T4: Preferential Parking	1, 2, 3

Table 7-1 GHG Reduction Measure Timeline and Phasing Schedule	
Reduction Measure	Phase
R2-T5: Roadway Improvements – Signals, Flow	1
R2-T6: Non-Motorized Transportation Facilities	1, 2, 3
R2-T7: Expand Alternative Fuel Vehicle Use	1, 2, 3
R2-T8: Anti-Idling Enforcement	2
R2-T9: Increase Public Transit	2
R2-T10: Employee Commute Alternative Schedules	1, 2, 3
Energy	
R2-E1: Residential Energy Efficiency Program	1
R2-E2: Residential Renewable Energy Program	1
R2-E3: Residential Retrofit Implementation Program	2
R2-E4: Residential Renewable Retrofit Program	2
R2-E5: Commercial Energy Efficiency Program	1
R2-E6: Commercial/Industrial Renewable Program	1
R2-E7: Commercial/Industrial Retrofit Program	2
R2-E8: Induction Streetlight Retrofits	1
Area Source	
R2-L1: Electric Landscape Equipment	1
R2-L2: No New Wood-burning Devices	1
R2-L3: Mandatory Curtailment Days	1
Water	
R2-W1: Water Use Reduction Initiative	1
R2-W2: Increase Reclaimed Water Use	2, 3
Solid Waste	
R2-W1: County Diversion Program	2
R2-W2: Construction Diversion Program	2

7.4 STEP 4—Public Participation

The citizens and businesses in Riverside County are integral to the success of GHG reduction efforts. Their involvement is essential in order to reach the reduction goals because this CAP depends on a combination of state and local government efforts, public and private sources of finance, and the voluntary commitment, creativity, and participation of the community at large. The County must strike a balance between development and environmental stewardship to keep the economy strong and, at the

7.5 STEP 5—PROJECT REVIEW

same time, protect the environment. The County will educate stakeholders such as businesses, business groups, residents, developers, and property owners about the CAP and encourage participation in efforts to reduce GHG emissions in all possible sectors.

7.5 STEP 5—Project Review

The CEQA guidelines support projects that lower the carbon footprint of new development, and encourage programmatic mitigation strategies that may include reliance on adopted regional blueprint plans, CAPs, and general plans that meet regional and local GHG emissions targets and that have also undergone CEQA review. The criteria needed to use adopted plans in evaluating impacts of GHG emissions from subsequent development projects is found in CEQA Guidelines § 15183.5. Once adopted, this CAP fulfills these requirements. The County is responsible for ensuring that new projects conform to these guidelines and meet the goals and requirements outlined in this CAP.

The County will implement the reduction measures for new development during the CEQA review, through the use of a County GHG Screening Table document based upon the CAP. The County GHG Screening Table document will provide guidance for the analysis of development projects and divide projects into two broad categories based upon the CEQA review they are going through. The screening table will provide a menu of reduction options. If a project can obtain 100 points from the screening table, the mitigated project will implement pertinent reduction measures such that it meets the reduction goals of the CAP and a less than significant finding can be made for the Project. The menu of options in the screening table is tied to the R2 Measures in the CAP and the IMs in the General Plan such that 100 points will meet the emission reductions associated with the R2 Measures and IMs. This menu allows for maximum flexibility for projects to meet its reduction allocation.

The methodology discussed above is described in more detail in the County GHG Screening Table document, presented in Appendix N of the General Plan and is consistent with the analysis and quantification methodology used in the CAP.

The Screening Tables also serve to document the implementation of reduction measures. Using the screening tables as a reduction measure monitoring tool is described in more detail in Section 7.6 below.

7.6 STEP 6—Monitoring and Inventorying

The County will create a system for monitoring the implementation of this CAP and adjusting the plan as opportunities arise. As the plan is implemented and as technology changes, the CAP should be revised to take advantage of new and emerging technology. If promising new strategies emerge, the County will evaluate how to incorporate these strategies into the CAP. Further, state and federal action will also result in changes which will influence the level of Riverside County emissions.

Screening tables completed during project review, as described in Section 7.5 above, will serve as documentation of the implementation of reduction measures. The County shall retain the completed screening tables in order to maintain a record of the types and levels of implementation of each of the

R2 measures. The point values in the completed screening tables also document the estimated levels of emission reductions anticipated during implementation. By maintaining these records, the County can monitor the CAP reduction measure implementation and compare the anticipated emission reductions with the goals for the CAP over time.

The GHG inventory will be periodically updated in coordination with the three (3) phases noted above: 2013 (to update with the Regional Transportation Plan outputs and Phase 1 progress); 2017 (to review Phase 2 progress, allow for course corrections to keep progress on target for 2020, and to develop post-2020 forecasts for use in planning for after 2020); and 2020 (to establish baseline for post-2020 GHG reduction planning). The County will also implement a monitoring and reporting program to evaluate the effectiveness of reduction measures with regards to progress towards meeting the goals of the CAP.

To provide periodic updates to the CAP inventory of GHG emissions, the County will use an Microsoft (MS) Excel format emissions inventory tool developed by the CAP consultant. This tool will include all the emission factors and emission sources specific to Riverside County. The tool will be designed such that County staff can input VMT, water use, and energy consumption data and the tool will quantify emissions for the Unincorporated Areas.

The CAP Implementation Coordinator shall be responsible for maintaining records of reduction measure implementation and insuring that the periodic updates to the emissions inventory are completed using the MS Excel based emission inventory tool.

7.7 STEP 7—Beyond 2020

As described above under the discussion of Reduction Goals, 2020 is only a milestone in GHG reduction planning. Executive Order S-03-05 calls for a reduction of GHG emissions to a level 80 percent below 1990 levels by 2050, and this level is consistent with the estimated reductions needed to stabilize atmospheric levels of CO₂ at 450 parts per million (ppm). Thus, there will be a need to start planning ahead for the post-2020 period. The County will commence planning for the post-2020 period starting in 2017, at the approximate midway point between plan implementation and the reduction target and after development of key ordinances and implementation of cost-effective measures. At that point, the County will have implemented the first two (2) phases of this CAP and will have a better understanding of the effectiveness and efficiency of different reduction strategies and approaches. Further, the State's regulations under AB 32 would have been fully in force since 2012; federal programs and policies for the near term are likely to be well underway; market mechanisms like a cap and trade system are likely to be in force and will be influencing energy and fuel prices; and continuing technological change in the fields of energy efficiency, alternative energy generation, vehicles, fuels, methane capture, and other areas will have occurred. The County will then be able to take the local, regional, state, and federal context into account. Further, starting in 2017 will allow for development of the post-2020 plan so that it can be ready for full implementation, including potential new policies, revisions to the General Plan (as necessary), programs, ordinances, and financing by 2020. The new plan will include a specific target for GHG reductions for 2035 and 2050. The targets will be consistent with broader state and federal

7.7 STEP 7—BEYOND 2020

reduction targets and with the scientific understanding of the needed reductions by 2050. The County will adopt the new plan by January 1, 2020.

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CHAPTER 8 REFERENCE

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CHAPTER 8 REFERENCE

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