



SANTA BARBARA COUNTY

Climate Action Strategy

Phase 1 - Climate Action Study

Produced by:
County of Santa Barbara
Planning and Development Department
Long Range Planning Division
Glenn Russell, Director
Jeff Hunt, Director of Long Range Planning
Peter Imhof, Supervising Planner
Heather Imgrund, Associate Planner
123 E. Anapamu St.
Santa Barbara, CA 93101
568-2000
<http://longrange.sbcountyplanning.org/>



Table of Contents

Credits and Acknowledgements.....	VII
Executive Summary.....	1
Acronyms	3
1.0 Introduction	5
1.1 Key Policy and Regulatory Mandates.....	6
1.2 County of Santa Barbara’s Approach	12
1.3 Jurisdictional Constraints and Opportunities.....	16
2.0 Municipal Operations/County as Producer of GHGs	17
3.0 County Jurisdiction/Regulator and Incentivizer of GHGs	19
3.1 Greenhouse Gas Emissions Inventory.....	20
3.1.1 State Greenhouse Gas Emissions Inventory	20
3.1.2 Santa Barbara County Greenhouse Gas Emissions Inventory.....	21
3.1.3 Reduction Targets	28
3.2 Existing GHG Reduction Measures, Programs, and Policies	33
3.2.1 Air and Energy.....	33
3.2.2 Land Use and Transportation	34
3.2.3 Green Building.....	35
3.2.4 Resource Conservation	36
3.2.5 Community Case Studies	42
3.3 Proposed GHG Emission Reduction Measures.....	44
3.3.1 Emission Reduction Measures Ranking Methodology	44
3.3.2 Air and Energy	46
3.3.3 Land Use and Transportation	53
3.3.4 Green Building.....	62
3.3.5 Resource Conservation	68
4.0 Climate Action Study Implementation.....	73
4.1 Climate Action Plan	75
4.2 Enhanced Building and Energy Codes and IBRP	76
4.3 SB 375 Implementation	76
4.4 Progress Reporting.....	77
Sources	78
Appendix A – Sustainability Action Plan	
Appendix B – Baseline and Forecasted GHG Emissions Inventory for the Unincorporated County	
Appendix C – Existing Comprehensive Plan and Community Plan Policies	

Tables

Table 1. Potential Actions Applicable to Local Governments	8
Table 2. Legislation of Local Government Importance in California	10
Table 3. Adopted and Proposed Climate Action Plans and Associated Reduction Goals.....	11
Table 4. ICLEI Local Governments for Sustainability GHG Reduction Milestones.....	14
Table 5. GHG Emissions for 1990 and 2007 for the Unincorporated Santa Barbara County.....	23
Table 6. Baseline & Projected GHG Emissions for the Unincorporated County ..	24
Table 7. Santa Barbara County 2008 County Municipal Operation Emissions ..	25
Table 8. Santa Barbara County 2020 Forecast By Sector.....	27
Table 9. Community Emission Reduction Target Scenarios	29
Table 10. State Scoping Plan Reductions.....	30
Table 11. State Scoping Plan Reductions Realized in Santa Barbara County	31
Table 12. Reductions Realized by State Scoping Plan and County within the Unincorporated County for 2007 and 2020	34
Table 13. GHG Reduction Potential Scoring	43
Table 14. Cost Effectiveness/Fiscal Impact Scoring	43
Table 15. Simplicity of Administration Scoring	43
Table 16. Local Control Scoring	43
Table 17. Associated Co-benefits Scoring.....	43
Table 18. Air and Energy Emission Reduction Measure Summary Table.....	50
Table 19. Land Use and Transportation Emission Reduction Measure Summary Table	59
Table 20. Green Building Emission Reduction Measure Summary Table.....	65
Table 21. Resource Conservation Emission Reduction Measure Summary Table	70

Figures

Figure 1. Scoping Plan Emission Reduction Measures Contribution to AB 32 Reduction Goals	7
Figure 2. Structure of the Climate Action Study	13
Figure 3. California 2008 GHG Emissions Inventory by Economic Sector	20
Figure 4. Comparison of 1990 Emissions to 2007	22
Figure 5. GHG Emissions by Sector for the Unincorporated County	24
Figure 6. 2007 GHG Emissions for the Unincorporated County by Scope	26
Figure 7. GHG Emissions Forecasted to 2035 by Sector	26
Figure 8. 2007 Per Capita GHG Emissions for the Unincorporated County	27
Figure 9. State and Local GHG Reduction Programs.....	28

Intentionally Left Blank

Credits and Acknowledgements

County of Santa Barbara

Climate Action Study Team Members

General Services Department

Roy Hapeman
Bob Nisbet
Robert Ooley

Housing and Community Development Department

Angela Hacker
David Matson

Planning and Development Department

Doug Anthony
Susan Curtis
Mark Matson

Public Works Department

Morgan Jones

Other Acknowledgements

Isla Vista Redevelopment Agency

Jim Heaton

Planning and Development Department

Paul Clementi
Nathan Eady
Lucy Pendl

Printing and Reprographics Department

Carmen Munoz

Public Works Department

Alan Nakashima
Carlyle Johnston
Leslie Wells

Intentionally Left Blank

Climate Action Study

Executive Summary

California is on the forefront of developing solutions to reduce greenhouse gas (GHG) emissions. In 2005, the Governor issued Executive Order S-3-50 to reduce the State's GHG emissions by 80% below 1990 levels by 2050. Enactment of several, related pieces of climate action legislation quickly followed, including Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006, Senate Bill (SB) 375 and SB 97. These laws together create a framework for GHG emissions reductions. Local governments have a vital role to play in assisting the State to meet these mandates.

In March 2009, the Board of Supervisors directed County staff "to take immediate, cost effective, and coordinated steps to reduce the County's collective GHG emissions" (BOS Resolution 09-059). Developed in response to this direction, the County's Climate Action Strategy (CAS) is a two-phase project comprised of (1) this Climate Action Study (Study), including a County-wide greenhouse gas (GHG) inventory, forecast and evaluation of potential emission reduction measures (ERMs), and (2) a Climate Action Plan (CAP), which, if adopted, would seek to reduce the County's GHG emissions through implementation of selected ERMs with the goal of achieving a GHG reduction target to be selected by the Board.

The purpose of this Study is to:

- 1) Demonstrate the County's commitment to the Climate Change Guiding Principles, as adopted by the Board of Supervisors, by identifying possible existing and future GHG reduction measures and programs.
- 2) Set the framework for the County to comply with the goals and requirements of Assembly Bill 32 and Senate Bill 97, based on an inventory of the County's current and projected GHG emissions.
- 3) Identify the next steps toward meeting the State's GHG emissions reductions target.

This Study provides a summary of policies, programs, and projects that the County of Santa Barbara can implement to reduce GHG emissions in the unincorporated County. The Study addresses GHG reduction through the County's roles as generator and regulator of GHG emissions as well as incentivizer of GHG reductions, with incentives being the priority. The Study summarizes policies that have already been put in place to reduce GHG emissions in the County as well as a list of new emission reduction measures (ERMs) that the County of Santa Barbara can implement in the future. ERMs are organized into 4 reduction categories: 1) Air and Energy, 2) Land Use and Transportation, 3) Green Building, and 4) Resource Conservation. The Study qualitatively evaluates and ranks these ERMs.

The Study also presents the results of a GHG emissions inventory, which evaluates current (2007), historical (1990) and projected (2020 and 2035) emissions County-wide and for the unincorporated County only. This Study focuses on the unincorporated County only as this is the area with respect to which Santa Barbara County maintains land use authority. The inventory calculates current GHG emissions for the unincorporated County to be 1.78 million metric tons of CO₂e, based on 2007 data. A backcast inventory to 1990, conducted using a "top-down" methodology extrapolating from general statewide data rather than direct emissions data, which are not available for 1990, indicates emissions of 1.62 million metric tons of CO₂e. A second 2007 inventory prepared using the same "top-down" methodology to determine the trend between 1990 and 2007, shows 2007 emissions of 1.54 million metric tons of CO₂e, representing a decrease of approximately 5% over this period. Forecasts to 2020 and 2035 project a 7.3% increase from 2007 to 2020 with emissions increasing to 1.92 million metric tons of CO₂e. Further growth in emissions

is forecast to 2035, with a 24.4% increase and emissions totaling 2.23 million metric tons of CO₂e anticipated. All forecasts assume a business-as-usual scenario.

The second phase of the CAS will be to develop a Climate Action Plan (CAP) which, if adopted by the Board, would implement selected GHG reduction strategies from the Study in the County. The development and adoption of the CAP would provide a system for implementing the ERMs identified in the Study. Specifically, the CAP would set an emissions reduction target and a plan to meet the target through implementation of the ERMs. The CAP would quantify expected reductions and costs and benefits of each ERM. Additionally, the CAP would establish County-wide GHG significance thresholds for emissions from other than stationary sources. Once adopted, the CAP will provide programmatic CEQA mitigation for impacts from GHG emissions from projects in Santa Barbara County, potentially relieving applicants of having to provide mitigation on a project-specific basis..

Acronyms

AB	Assembly Bill
BAU	Business As Usual
BOS	Board of Supervisors
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAS	Climate Action Strategy
CEQA	California Environmental Quality Act
CHWCC	Community Hazardous Waste Collection Center
CRT	Cathode Ray Tube
EO	Executive Order
ERM	Emission Reduction Measure
GAP	Good Agricultural Practices
GHG	Greenhouse Gases
HVAC	Heating, Ventilating and Air Conditioning
IBRP	Innovative Building Review Program
ICLEI	International Council for Local Environmental Initiatives or Local Governments for Sustainability
IVMP	Isla Vista Master Plan
MPO	Metropolitan Planning Organization
OPR	State Office of Planning and Research
RDA	Redevelopment Agency
RHNA	Regional Housing Needs Allocation
RRWMD	Resource Recovery and Waste Management Division
RTAC	Regional Targets Advisory Committee
RTP	Regional Transportation Plan
RWEP	Regional Water Efficiency Program
SAP	Sustainability Action Plan
SB	Senate Bill
SBCAG	Santa Barbara County Association of Governments
SBCAPCD	Santa Barbara County Air Pollution Control District
SCRTS	South Coast Recycling and Transfer Station
SCS	Sustainable Communities Strategy
SCT	Sustainability and Conservation Team
Study	Climate Action Study
SYVRTS	Santa Ynez Valley Recycling and Transfer Station
TDM	Transportation Demand Management
VMT	Vehicle Miles Traveled





1.0

Introduction

1.1 Key Policy and Regulatory Mandates

In 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-50 (EO) establishing greenhouse gas (GHG) emissions reduction targets for California. The Executive Order called for a reduction of GHG emissions to 2000 levels by 2010, a reduction to 1990 levels by 2020, and a reduction to 80% below 1990 levels by 2050. This EO established California as a leader in climate change policy. Multiple pieces of climate change legislation emerged following this EO and resulted in the passage of Assembly Bill (AB) 32, Senate Bill (SB) 97, and SB 375. This section highlights this legislation as it is relevant to local government action.

AB 32

The Global Warming Solutions Act of 2006 was enacted through Assembly Bill 32. A primary component of AB 32 was the establishment of a State GHG reduction target to 1990 levels by 2020, equivalent to the EO. This target applies to all of California. Based on emissions inventories conducted by the State, this is equivalent to a 15% reduction. To achieve this target, AB 32 directed the California Air Resources Board (CARB) to develop a Scoping Plan to establish GHG emission reduction measures (ERMs) for all sectors of the economy. The Scoping Plan identifies 18 ERMs which will affect multiple sectors of the economy (Figure 1). Key ERMS include a Cap-and-Trade Program; reduction of vehicle gas emissions through a low carbon fuel standard; changing the way we build our cities and communities through better planning (SB 375); improving electricity and energy use by improving energy efficiency in appliances; requiring 33% of energy to come from renewable sources; improving water efficiency; green buildings; Million Solar Roofs; auditing the 800 largest emission sources in the industrial sector to identify GHG reduction opportunities; capturing high global warming potential gases; carbon sequestration in forest projects; improving agricultural operational efficiency; and improved waste management and recycling programs.

AB 32 Emission Reduction Measures

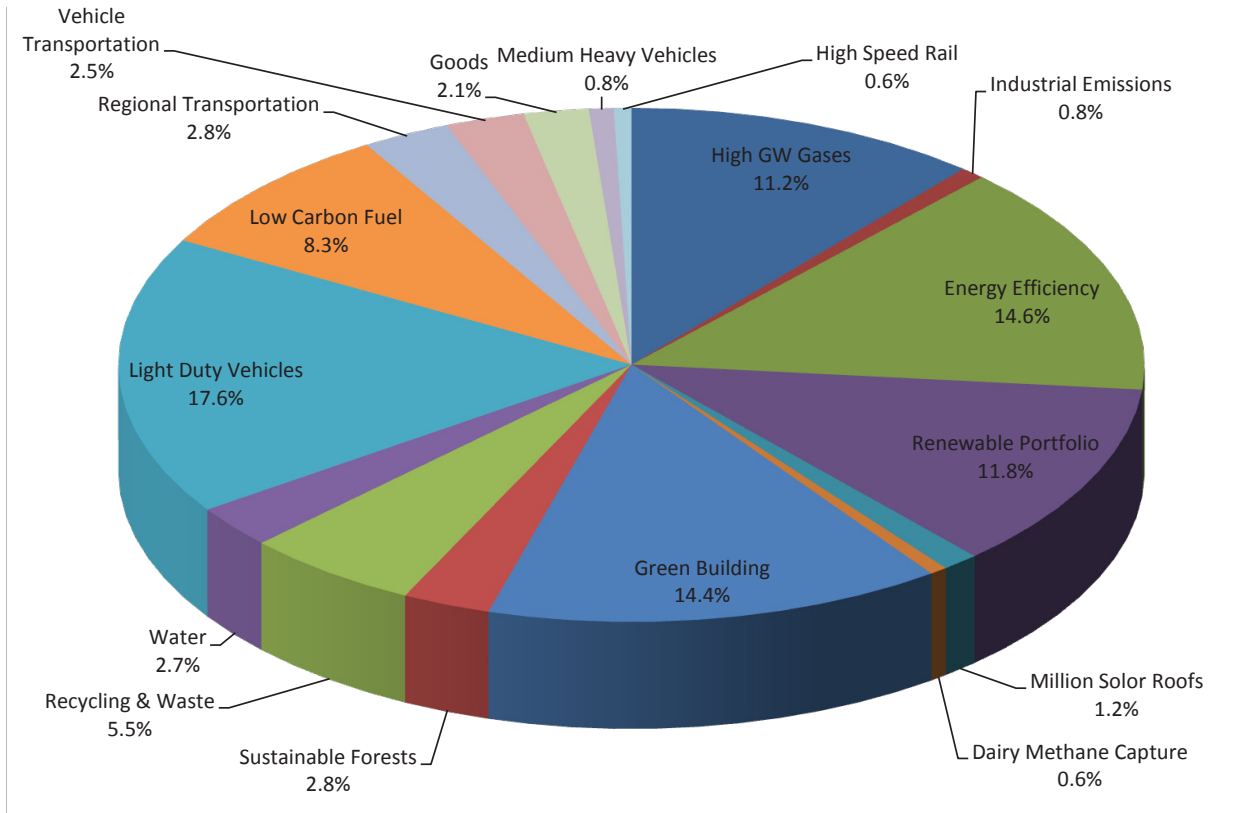


Figure 1. Scoping Plan Emission Reduction Measures Contribution to AB 32 Reduction Goals.

Local governments are viewed as essential partners to the State in implementing many of the ERMs identified in the Scoping Plan and ensuring progress towards GHG reduction goals. In fact, the Scoping Plan encourages a GHG reduction target for local government municipal and community emissions of 15 percent from current levels by 2020 to parallel the State’s target. With local governments uniquely positioned to set an example to the community through their own actions and to develop community-specific emission reduction strategies, it makes the most sense for local governments rather than the State to implement reduction measures. Of the eighteen measures identified in the Scoping Plan, nine have potential local government actions associated with them, as illustrated in Table 1.

Table 1. Potential Actions Applicable to Local Governments

Measure	Potential Actions	Municipal Relevance	Community Relevance
Energy Efficiency	Increase Utility Energy Efficiency Programs	✓	✓
	Reduce/promote reduction of energy consumption	✓	✓
	Install solar water heating systems for municipal facilities	✓	
	Provide incentives for building owners to participate in the “Million Solar Roofs”		✓
Renewable Portfolio Standard	Achieve a 33% renewable portfolio standard	✓	✓
Green Buildings	Facilitate green building construction, renovation, operation and maintenance at local government owned/operated facilities	✓	
	Implement and provide training for the state adopted green building code		✓
	Transit oriented planning		✓
	Provide incentives to exceed Title 24 standards and lead by example	✓	✓
Recycling and Waste	Control landfill methane emissions	✓	
	Adopt Zero Waste and Environmentally Preferable Purchasing policies	✓	
	Increase diversion from landfills	✓	✓
High GWP (Global Warming Potential) Gases	Ensure proper maintenance of fleet vehicles	✓	
	Ensure proper handling and disposal of waste refrigerants	✓	✓
Sustainable Forests	Promote urban forests		✓
	Make land use decisions that conserve forest lands		✓
Water	Improve efficiency of municipal water system	✓	
	Increase water recycling	✓	✓
	Reuse urban runoff	✓	✓
Transportation	Promote employee transit incentive programs	✓	✓
	Transit oriented planning		✓
Vehicle Efficiency	Provide routine fleet maintenance	✓	

SB 375

SB 375, which is an implementing measure of AB 32, addresses reducing GHG emissions from vehicles by reducing the number of vehicle miles traveled through the synthesis of transportation, land use, and jobs and housing planning. California's Metropolitan Planning Organizations (MPOs) will develop a Sustainable Communities Strategy (SCS) which would align the Regional Transportation Plan (RTP) with the Regional Housing Needs Allocation (RHNA) to create a plan to reduce vehicle miles travelled and reach regional GHG reduction targets set by CARB. The Regional Targets Advisory Committee (RTAC) is a committee that was put in place to provide recommendations to CARB on how to set the reduction targets for each MPO. The RTAC ultimately recommended that CARB set regional reduction targets that are ambitious yet achievable on a per capita metric. Draft reduction targets were set in June 2010. For the six smallest MPOs, including the Santa Barbara County Association of Governments (SBCAG), CARB staff proposed to work with these MPOs for the first target-setting cycle to set reduction targets based on the MPOs' most current greenhouse gas per capita projections. The six smallest MPOs represent only 5% of both the State's greenhouse gas emissions and vehicle miles travelled. The SBCAG Board voted for the target to be set at a zero net increase in emissions. CARB adopted this target in late September 2010.

SB 97

SB 97 amended the California Environmental Quality Act (CEQA) to require GHG emissions be analyzed under CEQA. SB 97 allows for public agencies to analyze and mitigate the significant effects of greenhouse gas emissions at a programmatic level as part of an adopted Climate Action Plan. Once adopted, later project-specific environmental review documents may tier from and/or incorporate that existing environmental review for the analysis of cumulative impacts related to GHG emissions. The benefit of a local jurisdiction analyzing GHG emissions at a programmatic level is that it removes the burden and cost of quantifying and analyzing GHG emissions under CEQA for project applicants.

Although SB 97 does not require lead agencies to adopt significance thresholds with respect to GHG emissions, it does require lead agencies to make significance determinations for such emissions. To address this requirement, the County has promulgated interim guidelines to be used by planners in evaluating GHG emissions based on the Bay Area Air Quality Management District's (BAAQMD) adopted thresholds of significance. These guidelines will be used until the County adopts significance thresholds as part of a Climate Action Plan (CAP), as discussed in Section 4.1.

Table 2. Legislation of Local Government Importance in California

State Legislation	Year Approved	Summary	Implementation Milestones
AB 32 Sets target to reduce GHG emissions	2006	Requires the California Air Resources Board (CARB) to develop regulations and market mechanisms to reduce California's greenhouse gas (GHG) emissions back to 1990 levels by 2020. County Impacts: Specific requirements for local agencies as well as impacts associated with noncompliance are expected to be outlined by CARB by 2012.	2008 - Baseline for mandatory GHG emissions and 2020 statewide cap adopted by CARB. 2009 - CARB adopted Scoping Plan 2012 - GHG rules and market mechanisms adopted by CARB take effect and are legally enforceable. 2020 - Deadline for emission reduction target.
SB 97 Ties GHG analysis to CEQA	2007	Requires the State to develop legal guidelines for analysis and mitigation of GHG emissions, pursuant to CEQA. County Impacts: CEQA documents, including negative declarations, mitigated negative declarations, and environmental impact reports are required to address GHG emissions.	2009 - Adoption of amended Guidelines. 2010 - Amendments effective March 18, 2010.
SB 375 Implements one portion of AB 32	2008	One implementation measure of AB 32 is the alignment of the Regional Housing Needs Allocation (RHNA) and the Regional Transportation Plan through development of a Sustainable Communities Strategy (SCS) that would be adopted by SBCAG. County Impacts: SB 375 calls for a new regional planning process, new requirements for environmental analysis, and strengthens the Housing Element rezone mandate overseen by the State Housing and Community Development Department (SHCD).	2010 - GHG reduction targets related to SB 375 are established by CARB and assigned to Metropolitan Planning Organizations (such as SBCAG). 2013 - Local Regional Transportation Plan updates (2014-2021), including adoption of the SCS & RHNA. 2015-2023 - Housing Element updates (2015-2023).

While all of this legislation is relatively new, many jurisdictions around the state have already made progress towards the goals and requirements of each bill. According to the 2010 California Planner Book of Lists, numerous California cities and counties are working on climate-related issues:

- 58 jurisdictions have already adopted a CAP or GHG Reduction Plan;
- 50 jurisdictions have adopted a community-wide greenhouse gas emission reduction target;
- 269 jurisdictions have adopted, or are in the process of drafting, policies and/or programs to address climate change and/or to reduce GHG emissions, including the City and County of San Luis Obispo, the County of Ventura, the City of Santa Barbara, and the City of Goleta.

The counties listed in Table 3 below have developed a municipal CAP, community CAP, or both. Reduction goals set by each county vary, but all are consistent with and sometimes more aggressive than the goals of AB 32.

Table 3. Adopted and Proposed Climate Action Plans and Associated Reduction Goals

County	Scope of Plan	Reduction Target
Alameda ¹	Municipal	15% below current by 2020
	Unincorporated County	80% below 1990 by 2050
Contra Costa	Municipal	50% below current by 2030
Marin	Municipal	15-20% below 2000 levels
	Countywide	15% below 2000 levels
Sacramento	Municipal	15% below current by 2020
	Countywide	15% below current by 2020
San Bernardino ²	Municipal	15% below current by 2020
	Countywide	15% below current by 2020
Sonoma	Municipal	20% below 2000 by 2010
	Community	25% below 1990 by 2015
Yolo ³	Unincorporated County	1990 levels by 2020
		27% below 1990 by 2030
		53% below 1990 by 2040
		80% below 1990 levels by 2050

Adopting a CAP is one action that local governments can take to create a program of solutions in concert with the goals of AB 32. As SB 375 is an implementing piece of legislation to AB 32, developing a CAP also positions the jurisdiction for compliance with SB 375. Local governments can use the CAP to lead by example to illustrate how they are going to reduce their own emissions from municipal operations. Additionally, a CAP is an avenue that can be used to develop a program of ordinances, policies, standards, codes, and incentive programs to be implemented in the community that can reduce greenhouse gas emissions. CAPs are also a tool that can be used to streamline the analysis of impacts and mitigation measures related to greenhouse gas emissions through CEQA. By using a CAP as this tool, the local government takes much of the burden associated with analyzing greenhouse gas emissions off of individual project applicants.

1 Alameda County Municipal CAP has been adopted with the above reduction target. The Community CAP is in its draft final stage with adoption planned for 2011.

2 San Bernardino County CAP has not yet been adopted or published; however, based on correspondence with staff, these are the reduction targets proposed.

3 Reduction targets from the Yolo County Draft CAP expected to be adopted Spring of 2011.

1.2 County of Santa Barbara's Approach

On March 17, 2009, the County Board of Supervisors adopted Resolution 09-059 which expressed the County's commitment to take immediate, cost effective and coordinated steps to reduce the County's collective greenhouse gas emissions in order to protect the community from the effects of climate change and implement programs to comply with the State of California's greenhouse gas reduction goals. The Resolution adopted the Santa Barbara County Climate Guiding Principles which recognize that investing in actions and creating a coordinated planning, measurement, evaluation, and reporting process to reduce GHG emissions can outweigh the costs. Specifically, the third Guiding Principle states "The benefits of investing in actions to reduce GHG emissions can outweigh the costs in numerous ways, including: improved economic vitality; public health and safety; natural resource protection; and infrastructure stability."

This Study serves as the first step in a coordinated approach to progress towards achieving these goals and towards regional sustainability and regulatory compliance with climate legislation. This Study covers the unincorporated county as well as municipal operations. It is a document that lays out future options the County can take to reduce GHG emissions and meet the goals of AB 32, comply with SB 97 and SB 375, and prepare for any emerging federal climate legislation through its roles as: 1) a producer of GHG emissions, 2) a regulator of GHG emitting activities, and 3) an incentivizer of GHG reductions, as illustrated in Figure 2 and described below:

- 1) **Producer of GHG Emissions** - The County can reduce its own internal municipal production of greenhouse gas emissions related to County operations. Numerous existing sustainability programs have already begun to quantify and minimize GHG emissions related to County operations. Moreover, the County's Sustainability and Conservation Team (SCT) is overseeing the implementation of measures and actions designed to enhance the energy performance of municipal buildings, improve the County's vehicle fleet, encourage water efficiency, and minimize waste. Additional staff time and resources to encourage the coordination of future County departmental efforts are needed to ensure that goals, policies, and actions are focused towards achieving the State's GHG emission reduction targets, sharing timely information among County departments, and minimizing the costs and duplication of efforts across departments.
- 2) **Regulator of GHG Emitting Activities** - The County can use new policies, ordinances, or standards to reduce GHG emissions within its jurisdiction. County departments such as Planning & Development and Public Works are involved in regulating land use and building activities, and developing community and regional plans. As a result, the County can impact the energy performance of the built environment, and is able to use the master planning and regional planning process to promote land use patterns and establish policies that reduce vehicle miles traveled.
- 3) **Incentivizer of GHG Reduction Efforts** - The County is well positioned to remove barriers and create incentives that encourage homes, farms, businesses and other institutions to take steps to reduce their GHG emissions. In addition, these incentives can stimulate the local economy and spur community economic enhancement by helping to build jobs and increase the livability of local communities throughout the County.

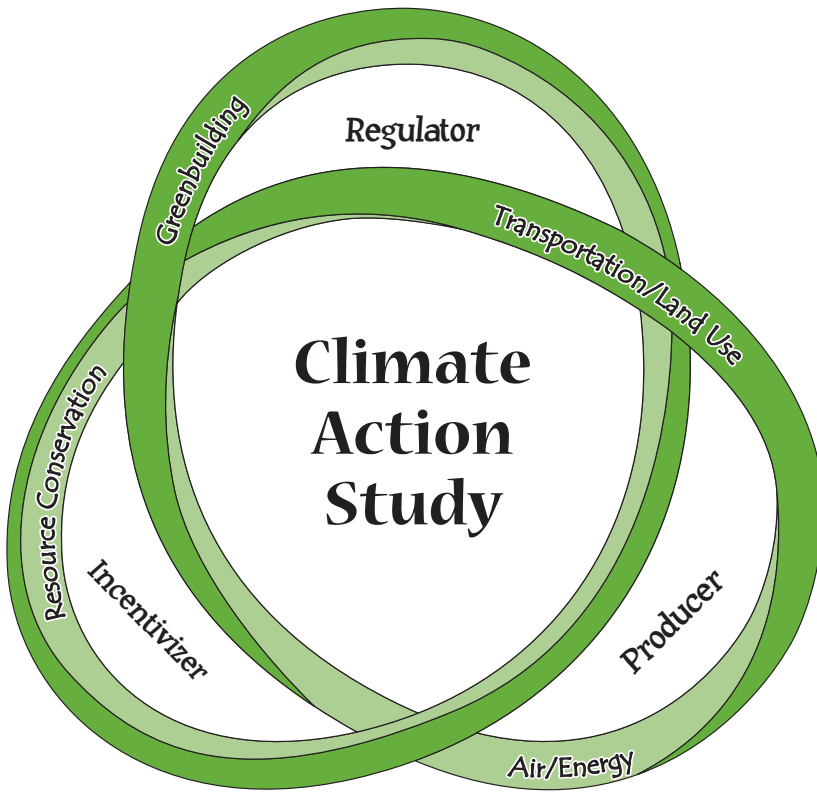


Figure 2. Structure of the Climate Action Study

The Sustainability Action Plan (SAP), adopted by the Board of Supervisors on July 13, 2010, addressed the first role as producer of GHG emissions and has been incorporated into this Study as Appendix A. By completing the SAP ahead of the Study, the County has positioned itself to provide leadership to the community demonstrating its commitment to reducing greenhouse gas emissions at the municipal level. This Study, with the incorporated SAP, provides the first steps towards completing the five recommended milestones to reducing greenhouse gases set by ICLEI, International Council for Local Environmental Initiatives or Local Governments for Sustainability, of which the County of Santa Barbara is an active member. ICLEI, founded in 1990, includes members from 1,049 local governments and their associations, representing over 300 million people in 68 countries. ICLEI provides technical assistance to members pursuing strategies for sustainable communities and reducing GHG emissions. The Cities for Climate Protection Milestone Guide developed by ICLEI establishes a five-milestone program that local governments can adopt to work towards reducing GHG emissions. Table 4 provides an excerpt of the five recommended milestones.

Table 4. ICLEI Local Governments for Sustainability GHG Reduction Milestones³

Milestone	Recommended Actions
Milestone #1	Conduct a baseline emissions inventory and forecast: local governments and nations across the world can only manage what they measure. The first step in managing greenhouse gas emissions, therefore, is to establish an inventory of those emissions.
Milestone #2	Adopt an emissions reduction target: provides a tangible and specific goal against which progress can be measured.
Milestone #3	Develop a Local Climate Action Plan: provides a strategy to reduce greenhouse gases and include measures already implemented.
Milestone #4	Implement policies and measures: most important part of the process, which generally involves cooperation and coordination among multiple departments.
Milestone #5	Monitor and verify results: provides a valuable tool to measure progress towards the reduction goal, allows for modification in implemented measures to increase effectiveness, and provides a quantification of emissions to be used in any emission trading mechanism that might be established in the future.

This Study completes Milestone #1 and lays the initial groundwork needed to complete ICLEI Milestones #2-5, which could be accomplished as part of the Climate Action Plan.

The Emission Reduction Measures discussed in this Study are organized using four potential reduction categories chosen to delineate a comprehensive set of Emission Reduction Measures (ERMs) that cover all greenhouse gas emission sectors: 1) Air and Energy, 2) Land Use and Transportation, 3) Green Building, 4) Resource Conservation. While this Study is the first step in a coordinated approach to reducing greenhouse gas emissions in the unincorporated County, it is not the last step in this effort. This Study focuses on assembling a cohesive program to reduce greenhouse gas emissions in the unincorporated County in its three roles as producer, regulator, and incentivizer. This Study is not a policy document and no policies will be adopted as part of this Study. Instead, the Study provides a report on the County’s efforts to date that promote GHG reductions and provides recommendations for future activities that can assist in assuring compliance with AB 32, SB 375 and SB 97. As discussed in Chapter 4, this Study is the initial step toward the completion of a CAP. The CAP will analyze the emission reduction measures identified in the Study using a greenhouse gas emissions inventory of unincorporated lands as a baseline measure. Upon adoption, the CAP will provide the County with a policy framework to reduce greenhouse gas

³ ICLEI Cities for Climate Protection Milestone Guide

emissions throughout the community. It will also provide prospective development applicants with a suite of GHG emission reductions options that may be implemented as a means to reduce cumulative GHG emission impacts or provide programmatic mitigation under CEQA.

Beyond implementing the recent legislation discussed above, this Study provides multiple co-benefits to the government and the community. Climate planning provides for a number of economic, environmental, and public health co-benefits. At a municipal level, by incorporating energy efficiency measures into County operations, fiscal benefits can be derived through reduced energy costs. Community green building incentives and policies that incorporate energy- and water-efficient features provide the co-benefits of reduced energy and water consumption and decreased energy and water costs for consumers. Additionally, buildings that use products made from recycled materials may help strengthen the demand for businesses that provide recycled materials used in green building. The reduction associated with the use of recycled building materials will reduce GHG emissions through fewer materials placed in landfills for anaerobic digestion, reduction in fuel use to transport materials to landfills, and a reduction in the extraction of raw materials. Resource and water conservation efforts have the co-benefits of reducing GHG emissions and costs for goods or services. For example, conserving and/or planting shade trees that help sequester GHG emissions also serve to reduce temperatures in neighborhoods, thereby reducing the need and associated costs for air conditioning. Improving water efficiency and conservation efforts will help reduce the energy usage and GHG emissions associated with water processing and delivery. They may also improve the resiliency of a community in providing water services during years of increased drought or reduced State water allocations. GHG reduction measures that decrease combustion-generated soot can help improve air quality. This provides the co-benefit of reducing the public health impacts associated with respiratory and cardiovascular illnesses linked to air pollution.

While the County recognizes that climate adaptation planning is an emerging issue, this Study is not intended to develop an adaptation strategy focused on managing risks related to climate change. This Study only serves to identify a coordinated approach to reduce greenhouse gas emissions and increase potential carbon sinks. The California Natural Resources Agency produced the 2009 California Climate Adaptation Strategy, intended to facilitate an ongoing and committed process at the State level to adapt to climate change in relation to environmental, social, and economic changes. More specifically, it identifies impacts, risks, and strategies for public health, biodiversity and habitat, ocean and coastal resources, water management, agriculture, forestry, and transportation and energy infrastructure. The County will continue to monitor State and federal actions related to climate adaptation in coordination with its efforts to reduce greenhouse gas emissions.

1.3 Jurisdictional Constraints and Opportunities

The County is carrying out this Study as a proactive effort to reduce GHG emissions in the County prior to a State mandate in order to position itself to influence any future mandates, assist the State in meeting its GHG emission reduction goals, and continue its leadership in environmental issues. In addition, as discussed above, the Study represents the first step toward a Climate Action Plan that could serve as programmatic CEQA mitigation of GHG emissions. The County's efforts are limited by jurisdictional constraints. The County has the ability to implement policy only in the unincorporated county where it has land use authority. State and federal lands and waters in the unincorporated county are not subject to County policies and regulations. These lands include the Los Padres National Forest, Vandenberg Air Force Base, University of California Santa Barbara, the Chumash Reservation, and the Santa Barbara Channel along with some smaller State or federally owned lands. While the County has no jurisdiction over these areas, it is committed to developing relationships with the other jurisdictions in the County and surrounding areas to create regional plans or programs. SBCAG and Santa Barbara County Air Pollution Control District (SBCAPCD), both regional agencies, have ongoing efforts related to climate change. The County is constantly monitoring these efforts and identifying opportunities for collaboration. Many of the ERMs discussed in Section 3.3 will require a collaborative effort from other agencies, such as SBCAPCD and SBCAG, and organizations to implement. Through implementation of this Study, the County can develop opportunities for collaboration and further develop functional relationships.

SBCAG

Through the implementation of SB 375, SBCAG is developing a Sustainable Communities Strategy (SCS), which will plan how the region will meet a target of zero net increase in per capita emissions from passenger vehicles by the year 2020. This target was set by CARB in September of 2010. SBCAG is currently in the process of updating their travel model as a first step towards developing the SCS which is expected to be completed in early 2013.

Santa Barbara County Air Pollution Control District (SBCAPCD)

The SBCAPCD is involved in climate change issues through multiple avenues. SBCAPCD included a climate protection chapter in the 2010 Clean Air Plan which was adopted in January of 2011. The chapter is informational only and provides an inventory of CO₂ emissions in the County. The GHG emissions inventory discussed in Section 3.1.2 uses the CO₂ inventory as a data source for the baseline emissions.

Additionally in January of 2011, the SBCAPCD amended their Tailoring Rules to be consistent with new Environmental Protection Agency (EPA) requirements to include GHGs as a regulated pollutant.

SBCAPCD is currently developing GHG thresholds of significance for application in CEQA review of new projects. A public workshop was held in early 2011 to discuss the approach and to present a proposed draft threshold of significance for stationary sources. The threshold of significance for stationary sources is expected to be adopted by the SBCAPCD Board later this year. Once adopted, the County will defer to the stationary threshold for its permitting actions.

Lastly, the SBCAPCD has incorporated climate change into outreach and education programs and may be involved in the implementation of GHG control rules as required by the AB 32 Scoping Plan.



2.0

Municipal Operations/County as Producer of GHGs

2.0 Municipal Operations/County as Producer of GHGs

The County's Sustainability Action Plan (SAP) was adopted by the Board of Supervisors (BOS) on July 13, 2010. The SAP serves to identify and quantify the sources of emissions generated by County municipal operations. County municipal operations are activities performed by the County government itself such as operation of fire trucks, police cars, and County administration buildings. Determining the quantity and source of GHG emissions positions the County to establish immediate emission reductions, quantify future progress, and identify the greatest opportunities for reductions in emissions.

The SAP profiled GHG emissions according to the Local Government Operations Reporting Protocol, developed by ICLEI, CARB, The Climate Registry, and the California Climate Action Registry. The inventory includes Scope 1, Scope 2, and Scope 3 emissions. Scope 1 emissions are defined to be direct GHG emissions, i.e., the on-site combustion of fuels, Scope 2 emissions are defined as indirect emissions from electricity generation, and Scope 3 emissions are other indirect emissions. Report of Scope 3 emissions is voluntary. The inventory determined that Santa Barbara County government operations produced 134,003 metric tons of CO₂, with Scope 1, Scope 2, and Scope 3 emissions representing 45%, 22%, and 33% of total emissions for the year 2008, respectively.

Also included in the SAP is a catalog, organized by energy-consuming groups, of actions and projects the County has already taken to reduce our GHG emissions and energy costs. The SAP identified 8 types of energy consuming groups: 1) Building Energy, 2) Mobile Workforce, 3) Vehicle Fuels, 4) Public Works Infrastructure, 5) Landfill Generation, 6) Resource Recovery, 7) Grounds Management and Sequestration, and 8) Printing and Reprographics. A discussion of examples of projects for future consideration is also included. With a total of \$9,759,182 spent in energy usage by County municipal operations in 2008, the SAP emphasizes that all energy saving measures also present a cost savings to the County.

By completing the SAP ahead of the Study, the County has positioned itself to provide leadership to the community demonstrating its commitment to reducing greenhouse gas emissions at the municipal level before asking the community to make the same commitment. The County should continue to work on the implementation of programs and projects outlined in the SAP to further illustrate the County's commitment to a reduction in energy use and reducing GHG emissions.



3.0

County Jurisdiction/Regulator and Incentivizer of GHGs

3.1 Greenhouse Gas Emissions Inventory

3.1.1 State Greenhouse Gas Emissions Inventory

CARB has completed a GHG emissions inventory for the State for the years 1990 to 2008. CARB has also produced a business-as-usual emissions forecast for the year 2020. The inventory covers carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs), that are the six Kyoto gases and nitrogen trifluoride (NF₃). The inventory grouped these emissions by economic sector. Results of this 2008 emissions inventory per economic sector are presented in Figure 3 below.

California GHG Emissions Inventory 2008

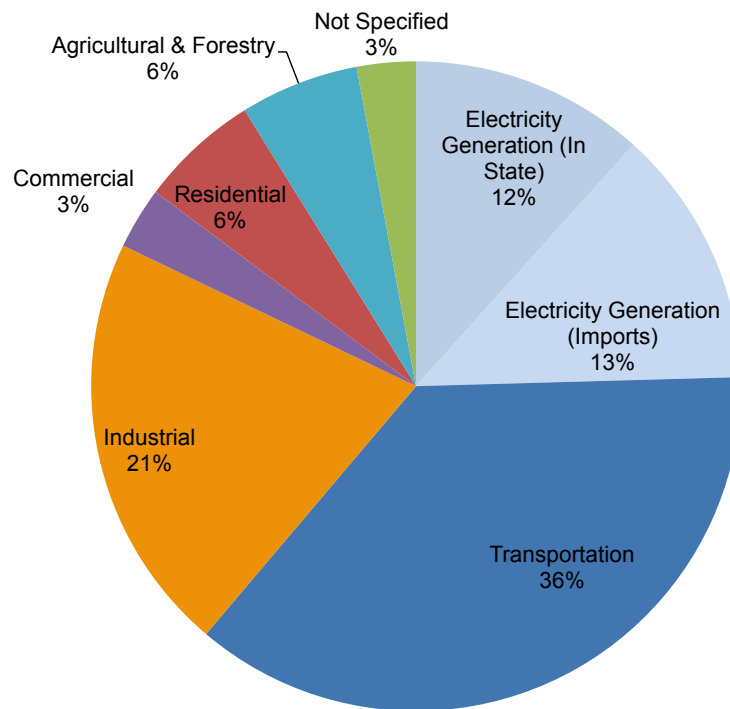


Figure 3. California 2008 GHG Emissions Inventory by Economic Sector

3.1.2 Santa Barbara County Greenhouse Gas Emissions Inventory

3.1.2.1 Scope and Methodology

A GHG emissions inventory was completed for the County of Santa Barbara (Appendix B). The inventory separately profiles emissions for all of Santa Barbara County and for the unincorporated County only. The main focus of the inventory is the unincorporated County only as this is the area which Santa Barbara County maintains land use authority. It excludes incorporated cities, the University of California (UCSB), tribal, State and federal lands. Incorporated area exclusions include the incorporated communities of Buellton, Carpinteria, Goleta, Guadalupe, Lompoc, Santa Barbara, Santa Maria and Solvang. Federal jurisdictional exclusions include Los Padres National Forest and the Vandenberg Air Force Base, as well as the offshore oil production facilities on the Outer Continental Shelf (OCS) and State waters up to the mean high water line. Tribal lands excluded are within the Chumash reservation.

The inventory includes emissions profiles for 1990, 2007, and business as usual forecasts to 2020 and 2035. The 2007 inventory represents the baseline year, while 1990 and 2020 are relevant to the goals outlined in AB 32, and the forecast year 2035 is relevant to the goals of SB 375. Detailed energy and emissions data were not available for 1990, which made it necessary to calculate 1990 emissions using an alternative method. The alternative method consisted of scaling down the Statewide Inventory. This method is referred to as the “top-down” method. For this reason, two inventories were prepared for 2007. The first is an inventory calculated using the same top-down calculation used to determine 1990 emissions. This inventory is used only to compare the growth of emissions from 1990 to 2007 and will be referred to as the “2007 top-down” method. The second 2007 inventory was prepared with a “bottom-up” method using direct energy and emissions data. This inventory is more detailed and accurate and thus is considered the baseline inventory. This inventory is referred to as the “2007 baseline inventory” or “2007 Detailed.”

Emissions forecasts for 2020 and 2035 were prepared using the bottom-up 2007 inventory. The assumptions to prepare the emissions forecast are based on SBCAG’s Regional Growth Forecast 2005-2040 (RGF 2007). The County modified the RGF 2007 population and jobs data for 2007 to reflect recent economic conditions. The adjusted baseline was then used to prepare emissions forecasts for 2020 and 2035. Additionally, the RGF 2007 is supplemented with a variety of information from other sources and discussed in detail in the Appendix B.

The emissions inventory includes two sets of emissions which are defined in the ICLEI protocol.

- Scope 1: All direct GHG emissions (with the exception of direct CO₂ emissions from biogenic sources), including stationary, area, and mobile sources. Agricultural activities such as dairies and vineyards are included here.
- Scope 2: Indirect GHG emissions associated with the consumption of purchased or acquired electricity, steam, heating, or cooling, water and wastewater pumping, and solid waste transport and disposal at out-of-county facilities.

Gases included in the inventory are the 6 gases recognized in AB 32 as greenhouse gases as well as a seventh gas, which was added in 2009 to the list of recognized greenhouse gases with SB 104. The gases are all expressed in terms of carbon dioxide equivalent (CO₂e) and are as follows:

- 1) Carbon Dioxide (CO₂)
- 2) Methane (CH₄)
- 3) Nitrous Oxide (N₂O)
- 4) Hydrofluorocarbon (HFCs)
- 5) Perfluorocarbon (PFCs)
- 6) Sulfur Hexafluoride (SF₆)
- 7) Nitrogen Trifluoride (NF₃)

3.1.2.2 Inventory Results

A comparison of the 1990 inventory to the 2007 top-down inventory shows a decrease in GHG emissions of approximately 5% for that period despite population growth of about 8%. The decrease in emissions was led by a 13% reduction of emissions from stationary sources, which can be explained by a significant decrease in industrial sector jobs. As seen in Figure 4 and Table 5 below, the results of the two 2007 inventories, derived using the two different methodologies, differ by about 14%. Nevertheless, while the 2007 baseline inventory is the more accurate of the two inventories in absolute terms, the 2007 top-down inventory provides for a useful trend comparison to 1990 top-down inventory emission levels. Details on this divergence are discussed in the full report in Appendix B.

Historic Unincorporated Santa Barbara County Greenhouse Gas Emission Inventories by Sector (Metric Tons of CO₂e)

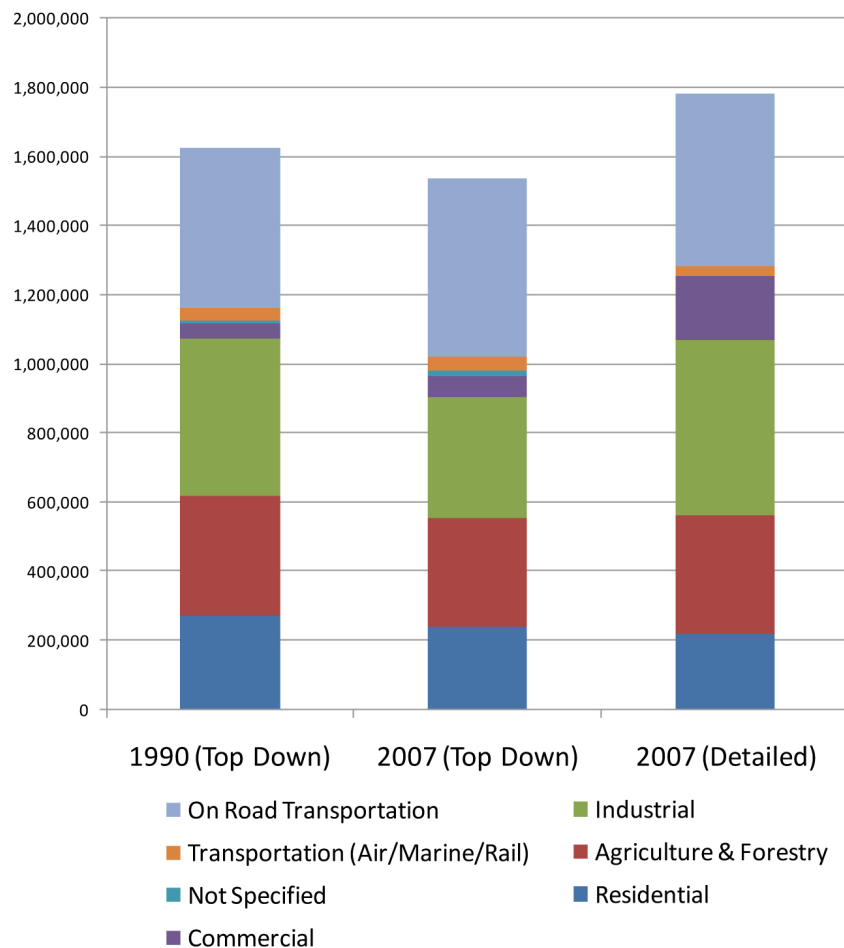


Figure 4. Comparison of 1990 Emissions to 2007.

While knowing the approximate trend in emissions from 1990 to 2007 is useful information, both the 1990 and 2007 “top-down” inventories were calculated extrapolating from general statewide data requiring reliance on many assumptions because direct emissions data (i.e., actual energy use) was not available for 1990. This methodology therefore involves many uncertainties in the calculation, making the 1990 inventory much less precise and reliable than the detailed, “bottom-up” 2007 inventory.

Table 5. GHG Emissions for 1990 and 2007 for the Unincorporated Santa Barbara County.

Unincorporated County GHG Inventory	1990	2007	2007
<i>Method / Source</i>	<i>Top Down</i>	<i>Top Down</i>	<i>Detailed</i>
Residential	272,171	239,518	220,327
Agriculture & Forestry	345,145	314,380	340,582
Industrial	457,383	349,425	507,009
Commercial	42,270	59,795	186,647
Not Specified	6,441	18,919	NA
Transportation (Air/Marine/Rail)	36,143	39,374	29,637
On Road Mobile	463,498	516,407	496,363
Total	1,623,051	1,537,819	1,780,565

A profile of GHG emissions for the year 2007 with the detailed bottom-up inventory (the baseline inventory) are shown in Figure 5 below. Total emissions are reported to be 1.78 million metric tons of CO₂e. The emissions profile diverges from the State’s with transportation accounting for 27.9% of the unincorporated County emissions compared to the State’s 36%. The proportion of agricultural emissions in the unincorporated County is 13.9%, which is much greater than the State’s of 6% for agriculture and forestry. This result is expected given that Santa Barbara County is an agriculturally intensive region with approximately 80% of the unincorporated County zoned for agricultural uses.

2007 Unincorporated Santa Barbara County GHG Emissions by Sector - All Scopes

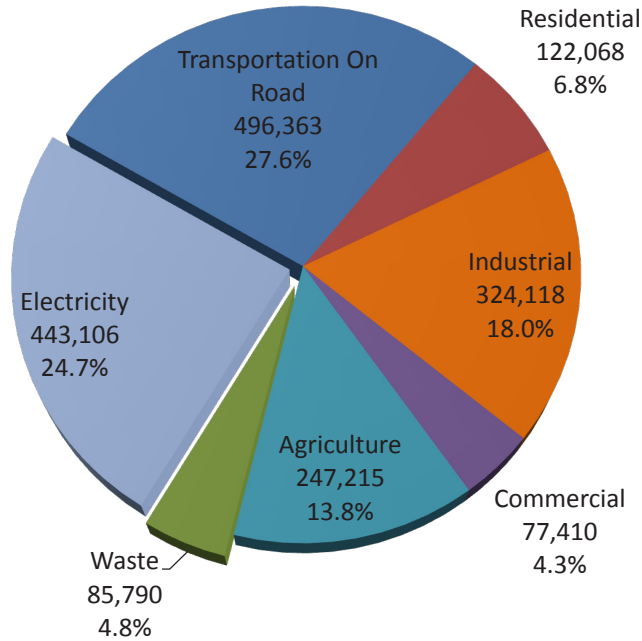


Figure 5. GHG Emissions by Sector for the Unincorporated County.

Table 6 below provides the results of the 2007 baseline inventory and forecasts to 2020 and 2035 with comparison to population and employment growth rates for the unincorporated County. Total emissions are forecasted on a business-as-usual scenario to grow from 1.78 million metric tons of CO₂e in 2007 to 2.23 million metric tons of CO₂e in 2035. This represents an overall growth over this period of 25%.

Table 6. Baseline and Projected GHG Emissions for the Unincorporated County.

Unincorporated County GHG Emissions	2007	2020	2035
Scope 1 Direct	1,336,290	1,561,588	1,839,428
Growth		16.9%	37.7%
Scope 2 Indirect	444,275	357,851	387,419
Growth		-19.5%	-12.8%
Total	1,780,565	1,919,439	2,226,848
Growth		7.8%	25.1%
Population (SBCAG)	138,176	145,934	153,993
Growth		5.6%	11.4%
Employment (SBCAG)	19,663	22,188	24,005
Growth		12.8%	22.1%

Table 7. Santa Barbara County 2008 County Municipal Operation Emissions

Municipal Operations Inventory	CO ₂ e (metric tons)	% of 2007 Unincorporated County Community Inventory ⁴
Scope 1	60,601.60	4.8%
Scope 2	29,454.10	6.3%
Scope 3	43,947.50	N/A ⁵
Total	134,003.20	7.8%

Forecasts of emissions by scope are illustrated in Figure 6. Scope 1, or direct emissions, increases at a rate of 1.1 % annually, while Scope 2, or indirect emissions, decreases by 0.5% annually out to 2035. The dip visible at the year 2020, illustrates the decline in Scope 2 emissions. Scope 2, which largely represents electricity emissions, falls due to a combination of lower emission rates per kilowatt-hour (due to an increase in renewable energy production and use) and reduced employment in electricity-intensive industries forecasted by SBCAG. A detailed profile of current and forecasted emissions by sector is provided in Figure 7 with details of the 2020 forecast by sector in Table 8. Residential and commercial are projected to increase most quickly, which is largely due to a switch in a substitution of ozone depleting substances for HFCs in coolants and refrigerants and PFCs in manufacturing. Figure 7 further illustrates that GHG emissions from electricity are expected to decline as a change to renewable energy occurs.

⁴ Some emissions from municipal operations occur within the incorporated areas, such as emissions from the SB County Bowl and the County Administration Building, both located within the City of SB. However, GHG reductions from all County municipal operations, regardless of geographic location, would be credited to SB County.

⁵ Scope 3 emissions for the 2007 Unincorporated County Community Inventory were not calculated.

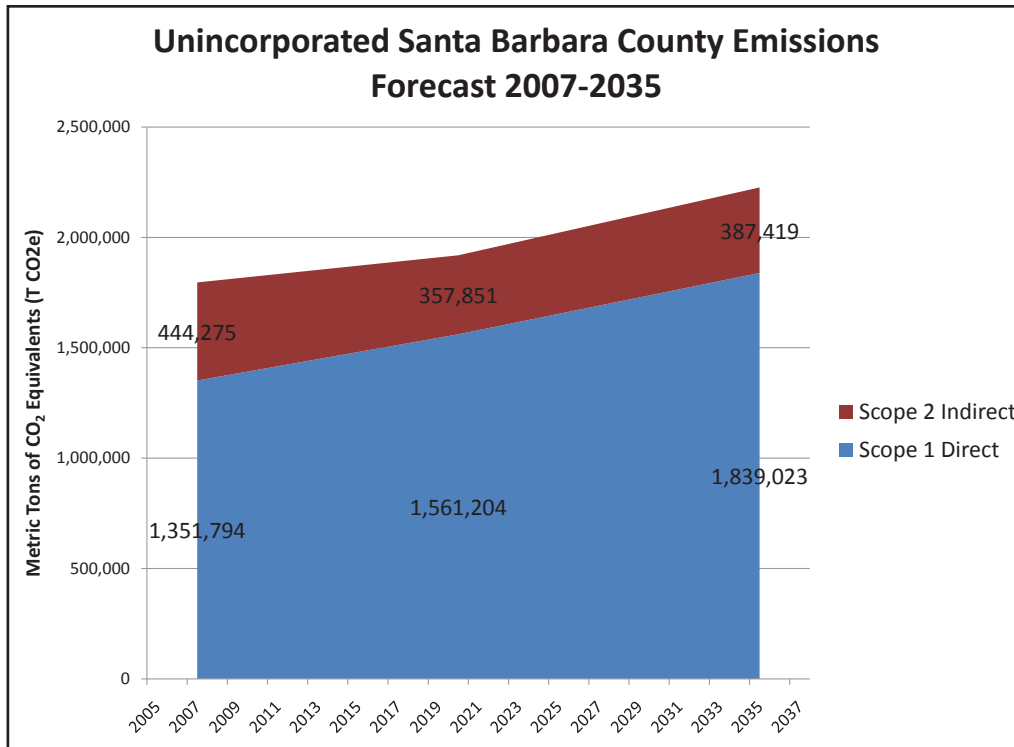


Figure 6. 2007 GHG Emissions for the Unincorporated County by Scope.

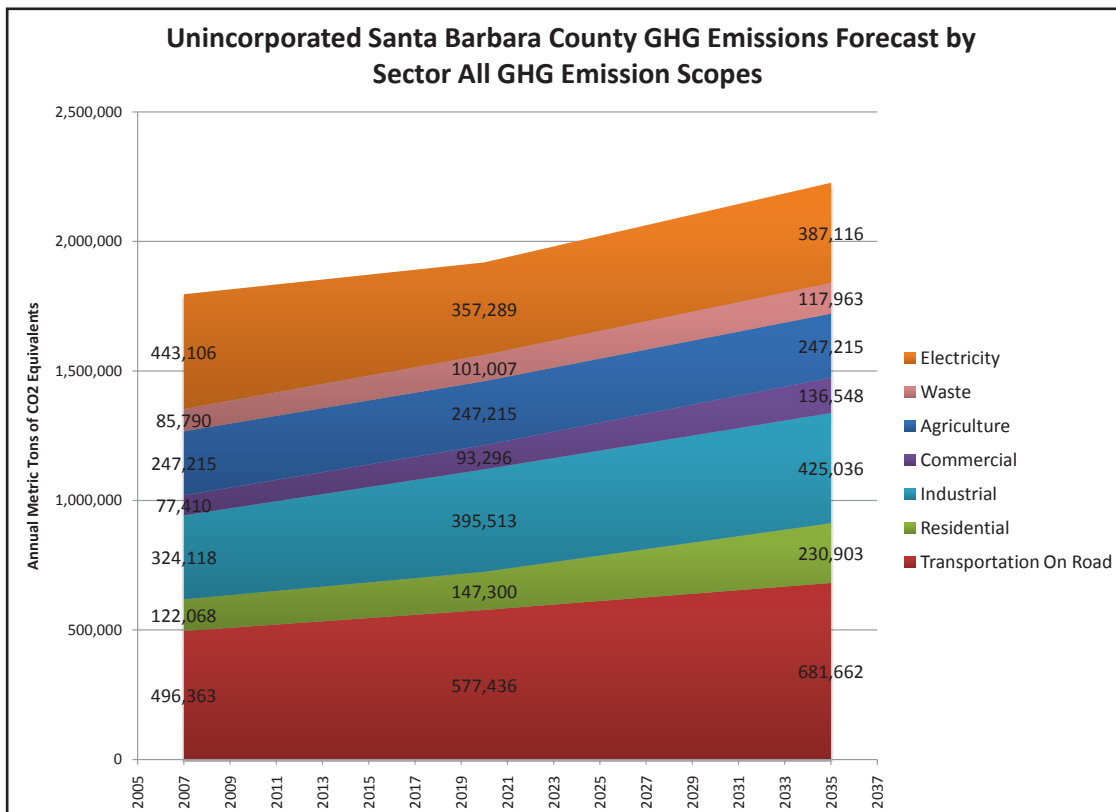


Figure 7. GHG Emissions Forecasted to 2035 by Sector.

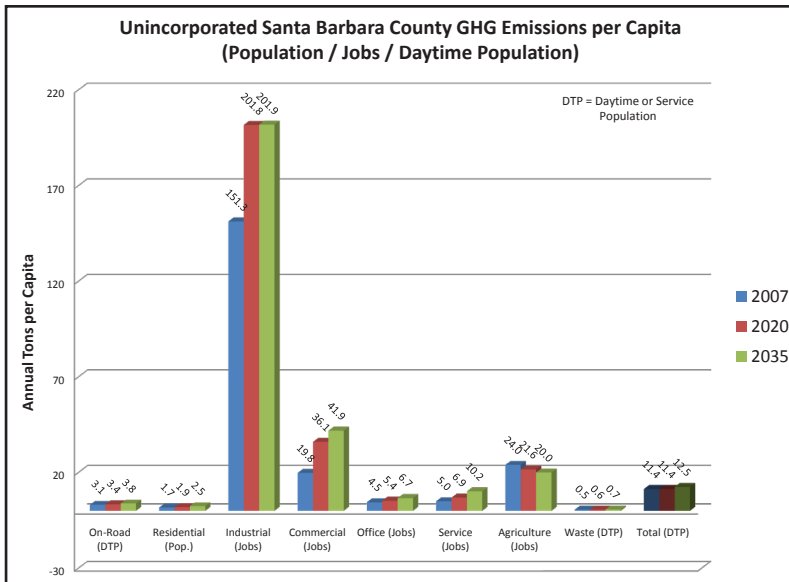


Figure 8. 2007 Per Capita GHG Emissions for the Unincorporated County.

Per capita emissions were analyzed by sector and calculated per resident, employee or daytime service population (DTP), depending on the sector. Results of this analysis are shown in Figure 8. The industrial sector provides the largest emissions per capita and is dominated by oil and gas production facilities in the unincorporated County. These facilities have large emissions from electricity generation and flared gas, and relatively few employees, which is why the emission rates are so high. Total emissions per capita are predicted to grow from 11.3 tons per DTP in 2007 to 12.5 tons in 2035.

Table 8. Santa Barbara County 2020 Forecast By Sector

End Use Sector	2020 Emission Forecast (MTCO ₂ e)	% of 2020 Forecast
On Road Transportation	577,436.0	30.1%
<i>Passenger Vehicles</i>	422,014.0	22.0%
<i>Heavy Duty</i>	155,422.0	8.1%
Electricity	357,289.0	18.6%
Residential	147,300.0	7.7%
Commercial	93,371.0	4.9%
Waste	101,007.0	5.3%
Agriculture	247,497.0	12.9%
Industrial	395,538.0	20.6%
Total	1,919,438.0	100.0%

3.1.3 Reduction Targets

While AB 32 did not place a mandate on local governments to reduce GHG emissions, CARB has identified local governments as essential partners in achieving California’s goals and encourages that local governments adopt reduction targets that parallel the States. Furthermore, per Resolution 9-059, which adopted the County’s Climate Change Guiding Principles, the County is committed to seeking GHG emission reductions to protect the community from the effects of climate change and recognizes that investing in actions to reduce GHG emissions can provide improved economic vitality, public health and safety benefits, natural resource protection, and infrastructure stability. In pursuing a CAP, the BOS will have the task of setting a GHG reduction target. There are two main available options:

- 1) Set a reduction target of 15% from current emissions by the year 2020. This target would follow the recommendation provided to local governments by CARB in the AB 32 Scoping Plan.
- 2) Set a unique reduction target at the discretion of the BOS. There is no specific State or federal mandate at this time for local governments with respect to GHG reduction and the BOS has wide latitude to determine a reduction target unique to Santa Barbara County.

Reductions in the County will be realized from both its own efforts and through the State’s implementation of emission reduction measures identified in the AB 32 Scoping Plan. Using an assumed overall reduction target of 15% of current emissions.

Figure 9 illustrates how GHG emission reductions from both local and State efforts will be additive. GHG emission reductions realized by the State efforts, any reductions realized by SBCAG through implementation of the SCS, and all reductions realized by the County will all work in concert to achieve an overall reduction.

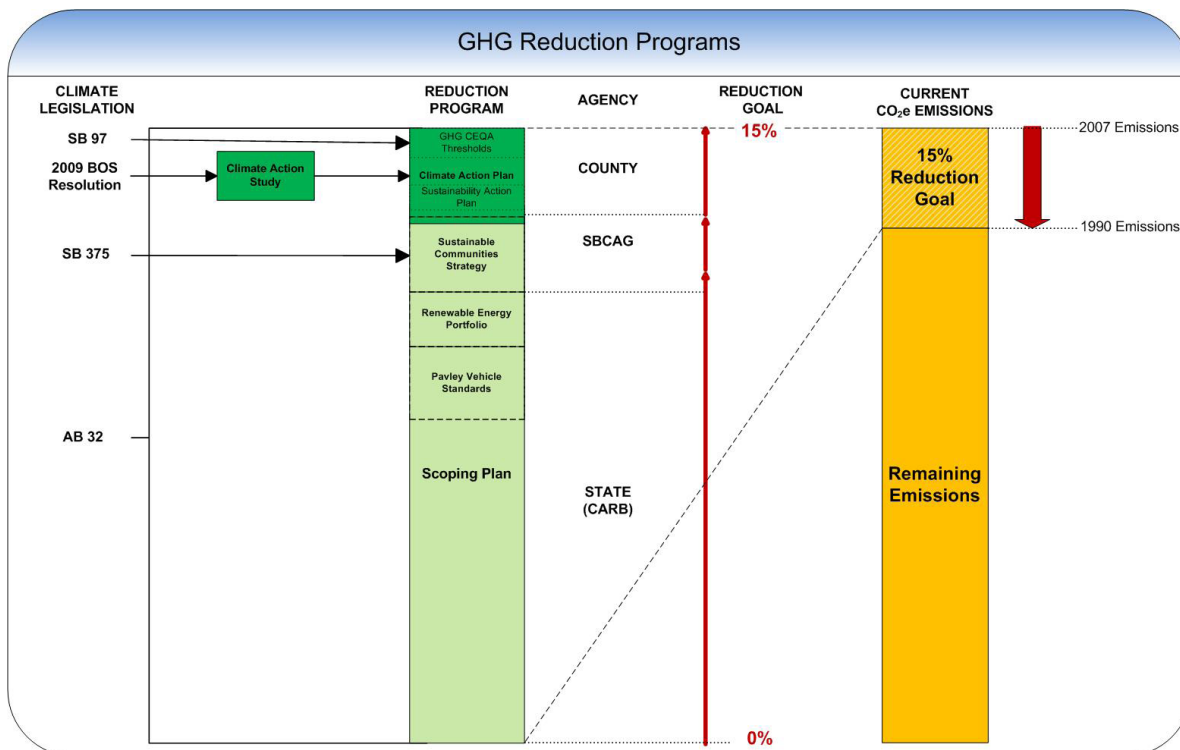


Figure 9. State and Local GHG Reduction Programs⁶

⁶ Figure 9 assumes a 15% reduction goal is adopted by the BOS as suggested in CARB’s guidance through the AB 32 Scoping Plan.

Table 9 summarizes the quantity and percentage by which the County would need to reduce emissions from the 2020 forecast based on different reduction target scenarios. A reduction target of 13.3% was chosen as it represents the reductions that would be achieved in the unincorporated County through the State’s implementation of the Scoping Plan only. This is illustrated in more detail in Table 11. A target of 15% below 2007 baseline emissions represents the recommendation CARB gives to local governments in the Scoping Plan. The target of 20% below 2007 is shown to illustrate what a more aggressive target would actually mean for the County. Following CARB’s guidance, a target of 15% below 2007 baseline emissions would be the equivalent of a 21.1% reduction from the 2020 forecast due to the increase in GHG emissions from 2007 to 2020. This overall reduction figure does not take into account the reductions that will be realized from the State’s implementation of the AB 32 Scoping Plan or SBCAG’s program under the Sustainable Communities Strategy.

Table 9. Community Emission Reduction Target Scenarios

Reduction Target	2007 Emissions (metric tons)	2020 BAU Emissions (metric tons)	Emission Goal (metric tons)	Reduction Needed from 2020 Forecast (metric tons)	% Reduction Needed From 2020 Forecast
13.3 % < 2007 by 2020	1,780,565.0	1,919,439.0	1,543,229.0	376,210.0	19.6%
15% < 2007 by 2020	1,780,565.0	1,919,439.0	1,513,480.3	405,958.8	21.1%
20% < 2007 by 2020	1,780,565.0	1,919,439.0	1,424,452.0	494,987.0	25.8%

As discussed above, the County would not be solely responsible for meeting the reduction target as actions taken by the State through implementation of the AB 32 Scoping Plan will count towards reductions realized in the unincorporated areas of Santa Barbara County. These reductions will be realized with no additional local action. Land use-related AB 32 Scoping Plan measures have been incorporated into the reduction target to determine the County’s additional responsibility once State measures have been realized. This approach is a best-case scenario and assumes all measures in the AB 32 Scoping Plan are implemented on time and achieve the estimated reductions reported in the AB 32 Scoping Plan. Table 10 quantifies the percentage by which each land use-related AB 32 Scoping Plan measure reduces emissions in the sector it affects on a statewide basis. Using this information in combination with emissions data by sector from the Santa Barbara County 2020 Forecast, reductions realized by State efforts in Santa Barbara County can be quantified.

Table 10. State Scoping Plan Reductions

Affected Emissions Source	AB 32 Scoping Plan Measure	Reductions Counted Towards 2020 Target (MMTCO ₂ e)	2020 Emissions Forecast (MMTCO ₂ e)		% Reduction from 2020 State GHG Forecast
Mobile	Light Duty Vehicle Standards (Pavley I and II)	31.7	Passenger Vehicle On Road Emissions	127	25.0%
	SB 375	5	Passenger Vehicle On Road Emissions	127	3.9%
	Low Carbon Fuel Standard	15	1On Road Transportation- Total	168	8.9%
	Vehicle Efficiency Measures	4.5	Passenger Vehicle On Road Emissions	127	3.5%
	Medium/Heavy Duty Vehicles (Aerodynamic Efficiency and Vehicle Hybridization)	1.4	Heavy Duty Trucks	41.2	3.4%
Area	Energy Efficiency Measures	4.4	Residential and Commercial	45.3	9.7%
Indirect	Renewable Portfolio Standard (33% by 2020)	21.3	Electrical Power	110	19.3%
	Energy Efficiency Measures	21.9	Electrical Power	110	19.8%
	Million Solar Roofs	2.1	Electrical Power	110	1.9%

Table 11 applies the anticipated State Scoping Plan reduction percentages by Scoping Plan measure to the County’s 2020 Forecast inventory. This table includes all measures implemented by the State related to land use, as well as SB 375 which is being implemented by SBCAG in this region. The reductions expected from SB 375 have been calculated using the reduction target adopted by CARB, zero net increase in emissions by 2020, which SBCAG is responsible for meeting through the development of a Sustainable Communities Strategy (SCS). A successful SCS would thus limit passenger vehicle emissions to current levels in both incorporated and unincorporated areas throughout the County. Projected reductions from other State Scoping measures affecting passenger vehicle emissions would continue to apply to current vehicular emissions in the 2007 baseline inventory.

As shown in Table 11, the land use-related measures implemented by the State will result in an 19.6% reduction in emissions from the Santa Barbara County 2020 Forecast. This value assumes all measures in the AB 32 Scoping Plan are implemented on time and achieve their full estimated reduction reported in the AB 32 Scoping Plan. This leaves a gap of 1.5% of emission reductions needed from the 2020 forecast to meet the Scoping Plan recommended reduction goal of 15% below 2007 emissions. If Santa Barbara County were to adopt this reduction target, which equates to a 21.1% reduction from the 2020 forecast, then remaining emissions reductions of 1.5% from the 2020 forecast would have to be achieved in order to meet the target, over and above what the State Scoping Plan measures are projected to realize. If the AB 32 Scoping Plan does not realize all the reductions which have been estimated, the responsibility of those reductions would be transferred to the County.

A 1.5% reduction is equivalent to 29,319.4 metric tons of CO₂e. A reduction of 29,319.4 metric tons of CO₂e is equivalent to removing 5,330 passenger vehicles from the road based on the Environmental Protection Agency’s estimate that a passenger vehicle emits 5.5 metric tons of CO₂e annually.

7 From the 2020 Emissions Forecast updated October 29, 2010 by CARB.

8 In September 2010, CARB adopted a specific reduction target of zero net increase in per capita emissions to be achieved within the Santa Barbara County metropolitan planning area through the Sustainable Communities Strategy being prepared by SBCAG. The relationship of this distinct regional planning commitment to County reduction targets is addressed in Table 11.

Table 11. State Scoping Plan Reductions Realized in Santa Barbara County

Affected Emissions Source	AB 32 Scoping Plan Measure	% Reduction from 2020 State GHG Forecast ⁹	End Use Sector	Emissions (MTCO ₂ e) - End Use Sector (2007 Unincorporated County Inventory)	Emissions (MTCO ₂ e) - End Use Sector (2020 Unincorporated County Forecast) ¹⁰	Emissions Reduced (MTCO ₂ e), Scaled to Unincorporated County	Santa Barbara County Emissions Reduced from 2020 Forecast ¹¹	Total
Mobile - Passenger Vehicles	Light Duty Vehicle Standards (Pavley I and II)	25.0%	Passenger Vehicle	376,276.0	422,014.0	93,920.9	4.9%	
	Low Carbon Fuel Standard	8.9%	Passenger Vehicle	376,276.0	422,014.0	33,576.1	1.7%	
	Vehicle Efficiency Measures	3.5%	Passenger Vehicle	376,276.0	422,014.0	13,332.6	0.7%	
Mobile - Heavy Duty Vehicles	SB 375 ¹²	NA	Passenger Vehicle	376,276.0	422,254.8	45,961.8	2.4%	
	Low Carbon Fuel Standard	8.9%	Heavy Duty Vehicle	120,087.0	155,422.0	13,868.7	0.7%	
	Medium/Heavy Duty Vehicles (Aerodynamic Efficiency and Vehicle Hybridization)	3.4%	Heavy Duty Vehicle	120,087.0	155,422.0	5,281.3	0.3%	
				All Mobile Subtotal				10.7%
Area	Energy-Efficiency Measures	9.7%	Residential	NA	147,300.0	14,307.3	0.7%	
			Commercial	NA	93,371.0	9,069.1	0.5%	
				Area Source Subtotal				1.2%
Indirect	Renewable Portfolio Standard (33% by 2020)	19.3%	Electricity	NA	357,289.0	68,933.5	3.6%	
	Energy Efficiency Measures	19.8%	Electricity	NA	357,289.0	70,875.3	3.7%	
	Million Solar Roofs	1.9%	Electricity	NA	357,289.0	6,796.3	0.4%	
				Indirect Subtotal				7.6%
NA	NA	NA	Waste	NA	101,007.0	-		
	NA	NA	Industrial	NA	395,538.0	-		
	NA	NA	Agriculture	NA	247,497.0	-		
				Total of all Sectors		375,922.8		19.6%
				Total Credits Given to AB 32 Scoping Plan				
				SB County Reductions Need to meet 1.5% < 2007 by 2020				21.1%
				Remaining Emission Reductions Needed		29,429.4		1.5%

9 % Reduction from 2020 State GHG Forecast is calculated in Table 2, Column 4 (State Scoping Plan Reductions)

10 Emissions by Sector for the SB County GHG 2020 Forecast is from Table 3, Column 2 (Santa Barbara County 2020 Forecast by Sector)

11 Scaled % Emissions Reductions are the product of % Reduction from 2020 State GHG Forecast and End Use Sector Emissions

12 The 2020 goal set by SB375 was zero net increase in per capita emissions from passenger vehicles, making the 2020 goal to keep emissions at 2007 value on a per capita basis. The value calculated here was done using per capita emissions based on daytime service population.

Table 12 translates the reductions needed to the 2007 baseline inventory. The AB 32 Scoping Plan land use-related reduction measures would supply the County with 13.3% of the reductions needed to reach a 15% reduction from current emission levels, leaving an remaining 1.7% of emission reductions to be achieved by other measures. Additional County reduction measures would be needed to absorb the remaining 1.7% of current emissions

Table 12. Reductions Realized by State Scoping Plan and County within the Unincorporated County for 2007 and 2020

Inventory Year	% Reductions Needed	% Reductions by State	% Reductions by Santa Barbara County
2007	15.0%	13.3%	1.7%
2020	21.1%	19.6%	1.5%

When setting a reduction target, the BOS should consider the potential implications of Executive Order S-3-50, issued by the Governor. The Executive Order set a goal to reduce the State’s GHG emissions by 80% below 1990 levels by 2050.

The next section of this Study reviews emission reduction measures available to the County to achieve the emission reduction target, once it is determined. The second phase of this program, the Climate Action Plan will more precisely quantify the expected reductions from these measures and the costs of implementing them.

3.2 Existing GHG Reduction Measures, Programs, and Policies

While the requirements of AB 32 and climate planning are relatively new, the County has already set into motion many programs and policies which reduce greenhouse gas emissions. It is important to identify existing programs and policies to understand whether these activities can be leveraged through expansion or modification to implement new measures to reduce GHG emissions. In addition to the discussion below, Appendix C provides a compendium of all policies that relate to a reduction in greenhouse gas emissions in the County's existing (or current) Comprehensive Plan.

3.2.1 Air and Energy

The Air and Energy category describes existing measures, programs, and policies which seek to reduce energy consumption through energy efficiency or the production of renewable energy. GHGs released through electricity generation accounts for 25% of the GHG emissions in both the State and the unincorporated areas of the County. Promoting and achieving more efficient use of energy promises to offer one of the most readily achievable and cost-effective means of GHG reduction.

Comprehensive Plan

The Energy Element of the Comprehensive Plan is replete with policies and implementation measures geared towards greater energy efficiency, reduction of transportation-related GHG emissions, and education and incentive programs to achieve energy efficiency. Additionally, the Housing Element contains policies encouraging energy efficient home construction.

Consolidated Plan

The 2010-2015 Consolidated Plan, a planning guide for jurisdictions developed by the County Housing and Community Development Department, sets a priority to support and promote projects that incorporate innovative energy efficiency and conservation through the HOME Investment Partnership and Community Development Block Grant funding opportunities.

emPowerSBC

Launched on Earth Day 2010, emPowerSBC uses a voluntary, market-based approach to generate demand for energy efficiency, water conservation, and renewable energy improvements in existing homes throughout the County. emPowerSBC is a true public-private partnership that builds upon national best practices in municipal energy financing. By pairing public credit enhancements with private lending capital, emPowerSBC will provide homeowners with accessible and attractive means to finance energy and water improvements, thereby alleviating the upfront costs usually associated with property retrofits. When combined with the state's new Energy Upgrade California program, emPowerSBC will provide a uniform approach in enabling efficiency by helping homeowners overcome the two main entry barriers to upgrading existing homes by 1) providing access to upfront capital with attractive terms and 2) helping homeowners navigate a new home performance market of services and incentives. With a goal of driving at least 1,300 upgrades by 2013, emPowerSBC will save property owners money, improve comfort levels of homes, enhance property values, create local jobs, and substantially reduce local GHG emissions and energy use.

emPowerSBC is one of two jurisdictions in California to be granted competitive funding by the US Department of Energy's Better Buildings program. The program is funded solely through \$3.2 million in state and federal American Reinvestment and Recovery Act Energy Efficiency and Conservation Block Grant (EECBG) funding.

3.2.2 Land Use and Transportation

The Land Use and Transportation category discusses programs and policy which seek to affect land development patterns to influence where jobs and housing are placed and how people move from their houses to work and commercial centers every day. Designing communities with well thought-out land use patterns can dramatically decrease the number of vehicle miles travelled and therefore have a direct effect on GHG emissions. Moreover, a well-developed multi-modal transportation infrastructure which is convenient and user friendly can also decrease vehicle miles travelled. Public transit, walking, cycling, telecommuting, flex scheduling, ride-sharing, and car sharing are all programs which could decrease greenhouse gas emissions.

Comprehensive Plan

The Land Use Element contains a rural and urban boundary demarcation policy which limits urban development and growth to lands zoned for urban uses. Agriculturally zoned lands, which represent 86% of all County lands within the rural boundary, are designated for low density, agricultural uses with policies documented in the Agricultural Element. This rural/urban boundary serves to focus urban development in specific geographic areas reducing sprawl and associated vehicle miles traveled (VMT) in rural unincorporated areas. Both the Housing Element and the Air Quality Supplement of the Land Use Element contain policies focused on minimizing VMTs. The Air Quality Supplement encourages alternative transportation and discourages land uses that can lead to auto-dependent facilities. The Housing Element contains policies promoting housing near job centers, encouraging alternative transportation, preventing urban sprawl and protecting rural land and resources through enforcement of the existing urban-rural boundary.

Isla Vista Master Plan

The Isla Vista Master Plan (IVMP) contains many goals, policies, and development standards that promote infill development and alternative forms of transportation such as cycling, walking, and public transit. IV is located adjacent to the biggest job center within the County, the University of California Santa Barbara. Promoting infill development in IV assists in placing new housing adjacent to the largest job center and keeps commuting down. The IVMP contains specific policies that address limiting parking options, encouraging the use of bicycles and walking as alternative modes of transportation, maintaining reduced automobile speeds to promote a safe environment for cyclists and walkers, public transit services that encourage ridership, and promoting a car share program (recently implemented). Two significant implementing actions of the IVMP already in place include the development of a new parking lot and a pilot Car Share program, as discussed below.

Isla Vista Redevelopment Agency (RDA) Parking Lot

RDA constructed a parking lot on Pardall and Embarcadero del Mar with the goal of encouraging private development by providing short-term paid parking for commercial users and off-site parking for nearby residential housing units. This lot has a solar photovoltaic installation which powers both the night lighting of the parking lot and Pardall Road.



Isla Vista Redevelopment Agency Parking Lot

Isla Vista Car Share Program

In April 2010, the RDA launched a 3-year Car Share pilot program in partnership with Zipcar in Isla Vista. The program makes cars available on an hourly rental basis to individuals who do not need a car for everyday travel. Individuals gain access to a car by joining an organization that maintains a fleet of cars in a network of locations. Beyond the benefits provided to members of the car share program, the community benefits as a whole by the existence of a transportation alternative for occasional and/or short trips. This use of this transportation alternative has the effect of encouraging a greater use of complimentary transportation modes such as walking, cycling and public transit. Car share programs provide well-maintained, late model vehicles that tend to be safer and less polluting. Accordingly, these programs produce the co-benefit of encouraging people to take older, often less-efficient vehicles out of service. Furthermore, according to recent studies, at least five private vehicles are replaced by each shared car. The resulting reduced vehicle ownership facilitated through the use of car share programs can lead to significant cost savings for participating individuals as well as increased parking availability and less need for new parking. Similarly, successful car share programs result in less congestion and an overall decrease in greenhouse gas emissions.

3. 2. 3 Green Building

The Green Building category discusses certain practices that can be implemented to decrease GHG emissions through energy efficiency, water efficiency, a reduction in the waste involved with building construction and operation, and the types of building materials that are used.

Innovative Building Review Program

The Planning and Development Department administers the Innovative Building Review Program (IBRP), which provides assistance and advice to development applicants on the methods which they can employ to increase energy efficiency in development projects. The IBRP Committee is made up of local design professionals, contractors, architects, engineers, energy consultants, and solar experts available to work directly with applicants in the project review process. The Committee has a tremendous amount of knowledge and interest in innovative, energy-efficient features that can be implemented locally.

Applicants can request design guidance on cost-effective methods to exceed California Energy Standards (Title 24) to meet one of the target levels established in the IBRP's target levels:



Photograph provided courtesy of Allen Associates

- Target 1 – Exceed Title 24 by 20% for Residential and 5% for Nonresidential and earn 5 points from the energy-efficient menu;
- Target 2 – Exceed Title 24 by 30% for Residential and 15% for Nonresidential and earn 12 points from the energy-efficient menu;
- Target 3 – Exceed Title 24 by 40% for Residential and 25% for Nonresidential and earn 30 points from the energy-efficient menu.

Participation in the IBRP program is free and voluntary. Incentives to participate are in place in the form of expedited plan check (Target 1), a fee reduction on the energy plan-check fees through Building and Safety Division (Target 2), and a Resolution of Commendation from the Board of Supervisors (Target 3). Projects which reach Target 2 receive the incentive for both Target 1 and Target 2. Furthermore, projects which reach Target 3 receive all three incentives. As an implementing action of this Strategy, the IBRP is proposed to be enhanced to include green buildings in addition to energy efficiency, provide more attractive incentives, provide linkages to emPowerSBC, and expand developer participation through various forms of outreach.

3.2.4 Resource Conservation

The Resource Conservation category describes the measures, programs and policies which help to conserve resources, such as agriculture, open space, forests, and other areas that act as carbon sinks by sequestering carbon from the atmosphere. It also profiles existing programs which reduce greenhouse gas emissions through improved waste management, such as reuse, recycling, and compost practices. Lastly, water efficiency and conservation are discussed in the Resource Conservation category. Since the transportation of water from the source to the user requires considerable energy, water efficiency and conservation will save energy and in turn reduce GHG emissions.



Comprehensive Plan

Both the Agricultural Element and the Conservation Element contain polices related to protecting agricultural resources, ecological systems, and open space. Protection of these resources acts to preserve the existing urban and rural boundary and sequester carbon, both of which are GHG emissions reduction activities.

Tajiguas Landfill Gas Collection System

This County has installed a landfill gas collection system at the Tajiguas Landfill. The system collects methane which off-gases from the landfill. The methane is converted into power through the use of an on-site generator. The system creates 3 megawatts of power, which is enough to power 2,500 homes locally. This program is also included in the SAP as it is relevant to both municipal operations and the community.

Conversion Technology Study

Santa Barbara County Resource Recovery and Waste Management Division (RRWMD) is conducting a study on conversion technology in conjunction with the Cities of Santa Barbara, Goleta, Solvang, and Buellton. The goal of this project is to establish a long-term plan for the disposal of community waste. Conversion Technology may be a way to reduce the environmental impact of our communities' waste, reduce our landfill dependence and provide green energy for our communities.

Santa Barbara County Regional Water Efficiency Program (RWEP)

RWEP promotes the efficient use of urban and agricultural water supplies County-wide, and provides information and assistance to the eighteen local water purveyors within the County. Through the RWEP, the County Water Agency coordinates cooperative water conservation efforts among purveyors, co-founds projects and programs, acts as a clearinghouse for information on water efficiency, manages specific projects and programs, and monitors local, state and national legislation related to efficient water use.

Curbside Commingled Collection of Recyclables

The RRWMD of the Public Works Department calculated a reduction of 23,761 metric tons of carbon equivalent in GHG emissions for calendar year 2009 as a result of the County's processing of various recyclable materials. This figure is based on the recyclables transported to the two companies that process our recyclables and the recyclables collected and processed by the County's transfer stations. Recyclables included in this calculation are aluminum cans, glass containers, numbers 1 and 2 plastics, corrugated cardboard, newspaper, mixed paper, mixed metals, mixed plastics, mixed recyclables, and tires. This program is also included in the SAP as it is relevant to both municipal operations and the community.

California Coastal Cleanup Day

Every September the RRWMD coordinates Coastal Cleanup Day for Santa Barbara County by soliciting volunteers to clean the various beaches and creeks in Santa Barbara County. During the 2009 Coastal Cleanup Day, 862 volunteers collected 14,268 pounds of trash and 1,475 pounds of recyclables from 21 beaches, ranging from Guadalupe Beach in the north to Rincon Beach in the south, 1 site on the Santa Ynez Chumash reservation, 5 creeks, and 1 waterway in the City of Santa Maria.

Christmas Tree Recycling Program

Each December, the RRWMD reminds people in Santa Barbara County to recycle their Christmas trees. Advertisements are placed in newspapers and on radio and television stations advising people where they can recycle their Christmas trees. Over half of the County's Christmas trees are processed at a County solid waste management facility.

Commercial Recycling Program

Since September 2003, a mandatory commercial recycling program encompassing businesses, apartments, condominiums, and mobile home parks, has been in effect for the unincorporated areas of the County. Under this program, owners of these types of entities may not throw conventional recyclables (e.g., aluminum foil and pie plates that are clean, cardboard, glass containers, metal cans, newspapers, paper, paperboard, and hard plastics numbers 1 through 7) into the trash. Through the use of newspaper and radio advertisements and the distribution of brochures, pamphlets, posters, and magnets, commercial owners were informed about the components of the program. County staff also met with commercial customers to determine their needs and to offer technical assistance to address issues. Since 2005, over 95 percent of commercial customers in the unincorporated County have recycled these materials either through recycling service provided by a franchise waste hauler or by collecting and self-hauling their recyclables.

Backyard Composting Program

Since 1992, the RRWMD has administered a residential composting program to encourage households to compost their yard waste, garden trimmings, and food residuals and thereby reduce the amount of trash that they generate. Composting bins are offered for sale year-round for \$40.00, a savings of over 50 percent off the retail price. The RRWMD also publishes a composting booklet that discusses such topics as the different composting systems and choosing the right one, building a composting system, using one's compost, and describing other types of yard waste reduction. Finally, composting workshops are conducted every spring for people who want to learn how to compost or need a refresher on composting methods. During fiscal year 2009-10, five composting workshops were held, attracting almost 100 attendees. In addition, 355 composting bins were sold with another 4 bins donated.

Construction and Demolition Debris Recycling

In Santa Barbara County, construction and demolition waste represents 31 percent of the waste generated in the unincorporated areas of the County. Through pricing and the recycling practices of local businesses, as well as the County-owned and operated recycling facilities, our community recycles over 75 percent of all construction and demolition waste. To ensure continued success in construction and demolition recycling, the following policies were enacted in 2008 by the RRWMD:

- New thresholds were established to define a significant impact of construction and demolition waste in the Planning & Development Department Thresholds & Guidelines Manual. Any project generating more than 350 tons of construction and demolition waste would be regarded as significant and its impacts would have to be mitigated through recycling efforts.
- To prevent existing construction and demolition recycling facilities from being overwhelmed by large scale development projects and thereby be forced to landfill recyclable material, the Planning and Development requires that a developer's Solid Waste Management Plan be coordinated with local recyclers and approved by the RRWMD to mitigate the effects of the activities.
- Under Chapter 17 of the County Code, unscheduled haulers are required to divert at least 50 percent of all collected construction and demolition waste. Since the vast majority of small and medium construction projects across the County use roll-offs for the collection of construction and demolition waste, this requirement ensures that unscheduled haulers continue their existing recycling practices and that they are held to the same recycling standards as our franchised haulers. An unscheduled hauler failing to meet this requirement will lose its permit.

Electronics Recycling Program

Households may drop off all types of electronic equipment for free at the County's two transfer stations, the South Coast Recycling and Transfer Station and the Santa Ynez Valley Recycling and Transfer Station. Businesses may drop-off electronic equipment containing a cathode ray tube (CRT), e.g., computer monitors, televisions, and laptop computers, for free. For a fee, businesses may drop off all other types of electronic equipment at these facilities. Every April and October, the RRWMD also holds one-day collection events in the Santa Ynez Valley for the collection of hazardous waste (including sharps and pharmaceuticals) and electronic waste. In addition, every October, a one-day event for the collection of hazardous waste and electronics is held in New Cuyama.

For calendar year 2009, 413,734 pounds of electronic equipment containing a CRT and 422,598 pounds of other electronics were collected at our Transfer Stations and during our one-day collection events. This program is also included in the SAP as it is relevant to both municipal operations and the community.

Green Business Program, Santa Barbara County

The RRWMD administers the Green Business Program of Santa Barbara County, a certification program that recognizes businesses that go beyond complying with applicable environmental regulations and that make voluntary changes in their facilities and operations in the key areas of energy and water conservation, solid and hazardous waste reduction and recycling, pollution prevention, and transportation. This is a multi-jurisdictional program designed to educate businesses on how to incorporate resource conservation into their practices, make the public aware of businesses that are environmental stewards, and foster a positive relationship among governmental agencies, the business community, and the public. Currently, businesses in the sectors of office/retail, restaurants, lodging establishments, automotive shops, and wineries are eligible to apply. Eventually, the program will be available to all types of businesses.

Hazardous Waste

The RRWMD administers the Community Hazardous Waste Collection Center (CHWCC), located on the campus of the University of California, Santa Barbara for the acceptance of small quantities of hazardous waste. Businesses that qualify as a Conditionally Exempt Small Quantity Generator, as well as households, may dispose of a variety of hazardous waste such as antifreeze, batteries, motor oil, paints, solvents, cleaners, and fluorescent lights. Antifreeze, batteries, motor oil, and latex paint are accepted at the Santa Ynez Valley Recycling and Transfer Station (SYVRTS), while batteries are accepted at the South Coast Recycling and Transfer Station (SCRTS). The RRWMD also holds a one-day event for the collection of hazardous waste and electronics in the Santa Ynez Valley every April and October and in New Cuyama every October.

For calendar year 2009, the following amounts of hazardous waste were collected:

- 593,193 pounds at the CHWCC;
- 83,200 pounds at the SCRTS;
- 9,695 pounds at the SYVRTS; and
- 53,790 pounds during three one-day collection events.

This program is also included in the SAP as it is relevant to both municipal operations and the community.

Green Waste

The RRWMD oversees the collection and diversion from the landfill of approximately 40,000 tons of green waste every year. RRWMD regulates Solid Waste & Recycling Collection franchises that require the curbside collection of residential green waste throughout the County, and which encourages the collection of commercial green waste as well. The division has also established preferential pricing for green waste at its landfill and transfer stations so as to discourage the treatment of this reusable commodity as trash. Marketing the end product from municipal green waste collection in California is typically a huge challenge. Many jurisdictions simply apply the ground material as Alternate Daily Cover (ADC) on top of a landfill. It would be easy to take this route, insofar as the County operates its own landfill, but it would not meet the higher intent of AB 939, the State's recycling mandate. Therefore RRWMD made the decision in 1992 to seek a local reuse for the collected green waste. In the North County, the material is transformed into compost by Engel & Gray. On the South Coast, the material is turned into mulch. Overall, the 40,000 tons of green waste which are collected each year find a new home as compost and mulch in local gardens, orchards, farms, and vineyards.

School Recycling Program

The RRWMD works with schools in the unincorporated County and the Cities of Goleta and Solvang to foster waste prevention, reduction, and recycling. Waste audits, recycling containers, outreach materials, presentations, and tours of the South Coast Recycling and Transfer Station and the Tajiguas Landfill are among the services offered to schools. During fiscal year 2009-10, 268 recycling containers were provided to schools, and 6 presentations were given to 124 students. The RRWMD also contracts with Art from Scrap (AFS), a nonprofit agency, to provide the following services to schools in the Cities of Goleta and Solvang and the unincorporated County.

- Teaching students the concepts of Reduce, Reuse, and Recycle through presentations in classrooms and at the AFS facility;
- Taking students on tours of the Tajiguas Landfill and the SCRTS;
- Describing the process of composting and its benefits; and
- Holding workshops whereby students make arts and crafts using used scrap materials.

Approximately 65 public and 40 private schools are eligible to receive these services under the County's program.

Outreach Efforts to Promote Reduce, Reuse, and Recycle

RRWMD publishes a Recycling and Resource Guide for Santa Barbara County in both English and Spanish. Additionally, an English version of the guide can also be found on the RRWMD's website: LessIsMore.org. A discussion of recycling outreach is also included in the SAP as it is relevant to both municipal operations and the community.

3.2.5 Community Case Studies

There are multiple examples around the County of business and individuals who are incorporate energy efficiency practices, renewable energy development, or other green measures into their business plans and daily lives. Examples range from larger private companies incorporating green practices into their business, such as MarBorg Hauling and Recycling (MarBorg) and described below, to individuals designing their new home to LEED standards, or an individual simply installing solar panels on their roof. This section provides examples of businesses that have incorporated some of these principles into their practice and illustrates the success of doing so. These businesses have experienced both cost savings and reduced GHG emissions.

Marborg Hauling and Recycling

MarBorg has achieved a 19.11% reduction in GHG emissions since 2007. This value has been reported to The Climate Registry and is currently being verified by a third-party verifier. The reduction in GHG emissions from MarBorg's operations was achieved through the implementation of multiple measures.



1) Solar Panels – In 2004 MarBorg installed solar panels to help offset their operational electricity usage. These solar panels have helped to offset approximately 30% of the electricity for each meter. The use of solar panels offsets approximately 51,011 kWh of electricity or 32 metric tons of CO₂e each year.

2) CNG Fleet – MarBorg operates 16 Compressed Natural Gas (CNG) vehicles in its on-road collection fleet. The use of CNG has been successful with MarBorg's own on-site CNG fueling station. With the use of their own CNG fueling station, MarBorg intends to completely transition to CNG for all on-road vehicles. Additionally, MarBorg has added biodiesel 20% to its fuel mix to assist in emission reduction of its diesel vehicles.

3) LEED Certified Headquarters – MarBorg is currently seeking LEED Platinum status for Existing Building: Operations and Maintenance for its headquarters. Through this process MarBorg was able to benchmark building performance, which has resulted in the following:

- MarBorg Headquarters is scoring an 82 out of 100 in Energy Star Portfolio Manager;
- MarBorg is purchasing 98% Green Seal Certified green cleaning chemicals and paper products;
- MarBorg has put a program in place to promote alternative transportation by carpooling, biking or using the bus for the entire staff;

- MarBorg Headquarters is 30% above its baseline for water efficiency; and,
- MarBorg Headquarters installed drip irrigation to reduce water usage; installed an irrigation meter to measure outdoor water use.

4) Recycling and Diversion Rates - MarBorg specializes in achieving high recycling and diversion rates. Using the EPA WARM Model, MarBorg has estimated a total tonnage of 248,871 diverted, which translates into 78,978 metric tons of CO₂e avoided.¹³

Teixeira Farms

Teixeira Farms installed a solar array on their property in 2006 to provide the energy to pump water for irrigation at their facility. When the pumps are not in use, the power generated is sent back into the electric grid adding enough power to supply approximately 180 homes. At the time this report was written, the solar array at Teixeira Farms was estimated to have generated 819,369 kWh of electricity and 1,016,018 lbs of CO₂ avoided.

Teixeira Farms participates in a Good Agricultural Practices (GAP) program which addresses site selection, adjacent land use, fertilizer usage, water sourcing and usage, pest control and pesticide monitoring, and cooler operations. Measures such as fertilizer and water usage have the ability to decrease GHG emissions from the agricultural activity while the other measures have public health benefits. A GAP program is discussed in proposed Resource Conservation Incentive Measure #4 in Section 3.3.5.¹⁴

¹³ Edgar & Associates, Comment Letter. May 25, 2005

¹⁴ Teixeira Farms. June 9, 2011 <www.teixeirafarms.com>

3.3 Proposed GHG Emission Reduction Measures

In order to meet the goals of AB 32 either existing programs will need to be expanded and/or additional programs, measures, and policies will need to be set in place. Section 3.2 identified existing programs and policies that can be expanded or modified to increase GHG emission reductions. Section 3.3 identifies a set of ERM measures that can be used to modify the existing program or to develop new programs and policies for additional GHG emission reductions.

3.3.1 Emission Reduction Measures Ranking Methodology

A database of ERM measures was compiled from multiple governmental and non-governmental organizations. A total of 311 measures were identified, which were synthesized down to 33 final measures through grouping measures into common themes and rephrasing them into one measure and deleting measures which were not applicable to the County. These measures were categorized into the four GHG reduction categories: 1) Air and Energy, 2) Land Use and Transportation, 3) Green Building, and 4) Resource Conservation. These categories have been chosen to create a comprehensive strategy for the County to reduce GHG emissions through multiple methods in all emission sectors.

The Air and Energy categories primarily focus on how the community can reduce energy consumption or switch energy use from traditional forms of energy to alternative energy. The Land Use and Transportation category discusses how to reduce greenhouse gases by reducing the overall number of vehicle miles travelled through the strategic design of communities and providing access to multi-modal transportation that is cheap and convenient for the public to use. The green building practices reported in the Green Building category can reduce GHG emissions by using energy-efficient building design, construction techniques, and sustainable operation and maintenance practices. The Resource Conservation category describes the measures being proposed to help conserve resources, such as agriculture, open space, forests, and other areas that act as a carbon sink by sequestering carbon from the atmosphere. Additionally, it profiles methods to reduce greenhouse gas emissions through improved waste management such as reuse, recycling, and compost practices.

ERM measures have been ranked based on a scoring mechanism that ranked the ERM measures based on five criteria: 1) GHG Reduction Potential, 2) Cost Effectiveness/ Fiscal Impact, 3) Simplicity of Administration, 4) Local Control, and 5) Associated Co-benefits. Each ERM received a qualitative score for each criterion and each criterion has been given a different weight based on its level of importance in determining an effective GHG reduction strategy. The greater the total score an ERM received, the higher it was ranked. ERM measures presented in Sections 3.3.2 to 3.3.5 are ordered with the highest ranking ERM being presented first for each category. Incentive measures were ranked separately from regulatory measures. As such, if a regulatory measure received a higher total score than an incentive measure, it is not necessarily given a higher priority and vice versa. Given that the scoring system is qualitative and somewhat subjective, the rankings should be understood as a limited analytical tool and one method of prioritization, but not be taken as a final or definitive ranking or measurement. The selection of the ERM ranking is ultimately a policy question that could be determined based on a number of factors.

Thus, while the ranking methodology provides a mechanism to determine which ERM measures are the most effective, it is not the only factor in determining what ERM measures are selected for implementation. An ERM that received a high score could be determined to be infeasible to implement and ultimately not selected. Alternatively, an ERM that receives a low score could be recommended for implementation given available funding or other available opportunities, such as partnerships with other organizations, that make the low-scoring ERM more likely to be successful, or simply because the low-scoring ERM complements

other ERMs selected as part of a coherent, well-planned emission reduction program that seeks to address multiple emission sources simultaneously.

With the exception of mitigation measures required under the CEQA review process, the County will lead GHG emission reduction efforts with incentive-based measures first. Only if incentive measures have been exhausted and GHG emission reductions are still necessary to meet the goals of AB 32, will the County pursue implementing regulatory measures. In the case of reducing GHG emissions to comply with CEQA, the County will provide a menu of options, through the Climate Action Plan, for developers to choose.

The scoring mechanism applies the following five evaluation criteria and associated weighting as follows:

Table 13. GHG Reduction Potential Scoring

Category	Scores
Low	1
Moderate	2
High	3

i. GHG Reduction Potential

This criterion considers the amount of GHG reductions a particular measure will achieve and how quickly the particular measure will achieve them. Measures that are believed to achieve the highest reductions in the least amount of time are given a greater preference. Each measure was assigned a rank of Low, Moderate, or High. This criterion was weighted at 30%.

ii. Cost Effectiveness/Fiscal Impact

This criterion considers what measures have the lowest monetary cost per unit of GHG emission reduction. This criterion was weighted at 30%.

Table 14. Cost Effectiveness/Fiscal Impact Scoring

Category	Scores
Low	1
Moderate	2
High	3

Table 15. Simplicity of Administration Scoring

Category	Scores
Easy	3
Moderate	2
Challenging	1

iii. Simplicity of Administration – 15%

This criterion addresses a non-monetary cost or other indirect costs, since the more complex a measure is to administer, the more staff time and effort associated with it and the less likely it is to be effective. Factors affecting how complex a measure is to administer include things such as monitoring, staff training, coordination among departments, and whether there is an already established program or division to oversee the measure. This criterion was weighted at 15%.

iv. Local Control -15%

This criterion takes into account whether the County has control over implementation of the measure. Measures that require approval or cooperation from multiple government bodies or both public and private organizations would be considered to have a low local control ranking and therefore may be more difficult to implement. Measures that can be implemented solely through County efforts would be considered to have high local control ranking and therefore easier to implement. This criterion was weighted at 15%.

Table 16. Local Control Scoring

Category	Scores
Low	1
Moderate	2
High	3

Table 17. Associated Co-benefits Scoring

Category	Scores
Many	3
Some	2
No	1

v. Associated Co-benefits -10%

This criterion is a catch-all category intended to capture other benefits of a measure not otherwise categorized such as public health benefits, environmental justice, economic benefits, etc., associated with a measure. This criterion was weighted at 10%.

The ERMs discussed in the Study for each of the four GHG reduction categories: 1) Air and Energy, 2) Land Use and Transportation, 3) Green Building, and 4) Resource Conservation are presented in order of the ranking prioritization applied to each ERM and discussed above. As such, ERMs ranked as the highest priority have been given a #1. Those with the second highest priority #2, third highest priority #3, etc. The ERMs also contain a summary information statement that identifies: the measure as either incentive based, regulatory based, or a hybrid of potential incentives and regulations; the GHG reduction potentials as either low, moderate, high, or a combination thereof; a determination as to the ability to quantify the reduction; a cost estimate of low, moderate or high associated with the cost to the County for implementation.

As discussed in Section 4.0, these ERMs can be further analyzed and refined for inclusion in a CAP. The CAP will provide a quantitative analysis using the greenhouse gas emissions inventory presented in Section 3.1 as a baseline. A cost-benefit analysis will be applied to selected measures included in the CAP guided by an approach to economic efficiency.

3.3.2 Air and Energy

Energy consumption, both gas and electric, by businesses and homes represents a significant source of GHG emissions in California at 9% of the total emissions. Where electricity from public utilities is produced by burning fossil fuels (e.g., oil or coal), the combustion process releases GHGs. GHGs released through energy generation accounts for 25% of the GHG emissions in the State as well as the unincorporated County. Even where the electricity is generated outside of the State, it is counted as indirect emissions of the activities of the electricity consumer. Similarly, the burning of natural gas or propane in the home or business for heating and cooking results in direct emissions. Promoting and achieving more efficient use of energy promises to offer one of the most readily achievable and cost effective means of GHG reduction. Shifting to the use of renewable energy sources also avoids emission of GHGs otherwise generated during energy production. Reduction in energy use through greater efficiency and shifting to renewable energy sources both have the additional advantage that the associated GHG emissions reduction is directly and precisely measurable.



With the AB 32 Scoping Plan identifying energy efficiency as one of the measures with the greatest GHG reduction potential, the County of Santa Barbara has placed a heavy focus on energy efficiency. Not only do energy efficiency improvements have the potential to greatly reduce greenhouse gas emissions, but energy efficiency can also play a role in decreasing the County's operational costs. Wiser use of energy resources has both economic and social benefits. Increasing energy efficiency can lead to cost savings through lower energy bills, reinvestment in the local economy, improved quality of life and public health,

increased compliance with State and federal goals, and a more secure future.

The Santa Barbara County Economic Outlook (USCB, 2010) indicates Santa Barbara County has averaged a population growth rate of 0.92% from 2000 to 2009, which is lower than the State of California average at 1.4% for that same period. With such a low growth rate, new development provides only limited opportunity to effectuate change and GHG reduction efforts should focus on retrofitting structures within the existing built environment. As such, the identification of strategies that encourage increased energy efficiency in the existing built environment are needed to compensate for the historically marginal population growth rate that results in limited new development in the County.

Incentive Measures

Air and Energy Incentive Measure #1 - Adopt a policy or program that offers incentives (such as streamlined permitting, permit waivers, or fee waivers) to encourage a switch in electricity generation from fossil fuels to renewable sources through small-scale renewable electricity generation.

This measure strives to encourage small-scale on-site generation of power through wind and solar by creating incentives that lower costs and simplify the permitting process. Renewable energy production at this scale is typically sized to meet on-site energy needs of the residence or facility where the renewable energy generation equipment is installed. If adopted in a wide-spread manner, small-scale renewable energy production has the ability to achieve significant reductions in GHG emissions within a reasonably short period of time (5-10 years).

Recent California legislation, AB 45, requires jurisdictions to adopt ordinances to allow for the installation of small wind generation systems outside the urbanized area with the issuance of a conditional use permit. Adopting these ordinances should facilitate the installation of the systems statewide. The goal of the bill is to assist in meeting the California Renewables Portfolio Standard Program which requires utilities to increase procurement of eligible renewable energy sources until they reach 33% by 2020. The County adopted an ordinance to comply with AB 45 in December 2010. The Planning and Development Department is in the process of analyzing potential amendments to the ordinance which will be presented to the BOS in Spring of 2011. These amendments could provide for the additional installation of small wind generations systems.

The County already has ordinances in place which require no or a low review level permit to install either roof-mounted or freestanding solar energy systems. Opportunities exist for the County to couple these ordinances with incentives encouraging the development of these projects. Some possible incentives include waiving permit fees or providing expedited permit processing, depending on the size and nature of the proposed installation.

Implementation

Development permit-related incentives to encourage renewable power production can be implemented easily by local legislative action. Permit fees and requirements can be changed by local government ordinance.

Measure Type
Incentive

GHG Reduction Potential
High

Reduction Quantifiable
Yes

Cost Estimate
Low

Measure Type

Hybrid

GHG Reduction Potential

High

Reduction Quantifiable

Yes

Cost Estimate

Moderate

**Measure Type**

Incentive

GHG Reduction Potential

High

Reduction Quantifiable

Yes

Cost Estimate

Moderate

Measure Type

Incentive

GHG Reduction Potential

High

Reduction Quantifiable

Yes

Cost Estimate

Moderate

Air and Energy Incentive Measure #2 - Promote the use of clean alternative energy production (renewable energy sources, methane recovery at landfills, waste-to-energy production) by encouraging development of larger-scale renewable electrical generation facilities.

This measure seeks to promote larger-scale electricity generation from renewable sources by encouraging development of renewable production facilities such as wind farms, solar fields, ocean wave and tidal current generators, landfill gas, and solid waste conversion. The measure could include a number of specific components, including mapping lands and ocean areas suitable for renewable energy generation, establishing zoning overlays designating where certain utilities are allowed, and establishing specific permitting paths for particular energy production facilities.

Implementation

This measure could be put into effect as part of a Planning and Development Department work program item and long-range planning effort. The planning effort could undertake necessary research and mapping and then propose necessary Comprehensive Plan amendments and ordinances for BOS adoption to establish the energy production overlay and permit paths.

Air and Energy Incentive Measure #3 - Maximize energy efficiency throughout the unincorporated County through incentivizing energy efficient retrofits of existing structures.

Some of the most cost-effective reductions in GHG emissions can be attained by more efficient use of energy. In combination with other measures promoting alternative energy production, energy efficiency measures can dramatically reduce GHG emissions. New development represents only a small percentage of the overall building stock on an annual basis. To achieve meaningful energy efficiency gains, retrofits of existing structures must be targeted. Incentives for such energy efficiency retrofits could include direct subsidies, tax rebates, special financing (as through the AB 811 such as emPowerSBC) as well as permit fast-tracking or permit waivers for such projects.

Implementation

Direct financial incentives for energy efficiency retrofits such as property tax rebates or direct subsidies could be accomplished by County legislation, with dedication of funding or consideration of revenue implications.

Air and Energy Incentive Measure #4 - Support or provide tax credits, grants, loans and other incentives to assist the public, businesses and local agencies for the purchase of energy efficient equipment.

Financial incentives that are intended to encourage replacement of existing, energy inefficient appliances and equipment with new, more energy efficient models can achieve significant reductions in energy use and associated GHG emissions. The County recently implemented emPowerSBC, discussed in Section 3.2.1, which is a voluntary program that provides financial assistance in the form of loans for the installation of

eligible energy efficiency, water efficiency, or renewable improvements. Owners will repay emPowerSBC financing through an assessment levied against their property. Other incentives to assist the community in pursuing energy efficient upgrades could also be established such as tax credits/rebates and grants.

Implementation

Similar to incentives for energy efficient retrofits, financial incentives for more energy efficient equipment and appliances could be created through County legislation to establish credits or grants. The County could work with the local Chambers of Commerce, the South Coast Energy Efficiency Partnership, Energy Watch, and the local utilities to develop and implement programs.

Air and Energy Incentive Measure #5 - Establish public outreach (elementary school component, public workshops, etc.) and employee education mechanisms to teach about energy efficiency and other climate-related initiatives.

Education and information about energy efficiency, renewable energy and GHG reduction helps broaden awareness of climate issues and can be one of the most effective tools to achieve reduction in non-renewable energy use. Complemented by this measure is an ongoing public outreach program that would reach out to schools and community groups through a series of trainings and lectures combined with a publicity campaign through advertisement. The outreach program could cover the importance of GHG emission reduction, options and methods to achieve greater energy efficiency at home and work, and renewable energy programs. The program could include a component to provide information on resources available through the County, local utilities companies, and the State and federal governments for energy efficient projects.

The City of Cincinnati recently established an outreach program to increase the impact of their locally adopted CAP. The program includes marketing through a private firm, creating and distributing toolkits for local schools on climate change and reduction measures, and holding an annual event to discuss the success of their climate change initiatives in the Cincinnati area. It is estimated that the program will reduce their GHG emissions by 6% over the course of 3 years.

Implementation

Establishment of a public outreach program could happen as a departmental work program item with dedication of funding and specification of scope and timeframe.

Measure Type Incentive
GHG Reduction Potential High
Reduction Quantifiable No
Cost Estimate Low

Regulatory Measures

Measure Type

Regulation or Hybrid

GHG Reduction Potential

Low-moderate

Reduction Quantifiable

Yes

Cost Estimate

Moderate

Air and Energy Regulatory Measure #1 - Maximize energy efficiency throughout Santa Barbara County through energy efficient upgrades on all development projects.

This ERM could set energy efficiency standards for all new development projects. The measure could encompass all energy-using appliances and could complement Green Building measures that address building materials and insulation. Under a hybrid approach, builders and property owners could be able to select the preferred technology and energy efficiency measures to meet efficiency standards. The regulatory approach could also be paired with incentives to encourage property owners to go beyond minimum standards. Given the relatively slow rate of new development and the small percentage of the total building stock that new building represents, this measure is likely to achieve only low to moderate GHG reductions overall. Although reductions on individual projects may be great, the cumulative GHG reductions of this measure would be relatively small for at least ten years from implementation.

Implementation

Requiring energy efficiency measures can be achieved through ordinance, for example, through amendment of the Building Code. Compliance with heightened energy efficiency standards could be achieved through building inspection prior to occupancy.

Measure Type

Regulation or Hybrid

GHG Reduction Potential

High

Reduction Quantifiable

Yes

Cost Estimate

Moderate

Air and Energy Regulatory Measure #2 - Replace inefficient appliances, such as natural gas and propane space and water heating with more efficient and/or alternative fuel appliances, such as electric heat pump and solar water heaters.

The replacement of certain inefficient appliances with more efficient or alternative fuel appliances as part of remodels and renovation projects over a certain size is one way to achieve broad-based energy efficiency. For example, replacing traditional tank water heaters with gas on-demand water heaters or solar water heaters can result in significant energy savings. Additionally, simple upgrades such as installing insulation to attic piping can also result in energy savings. Remodels and renovation projects that are above a set threshold, such as over 500 square feet, could trigger energy efficiency upgrades.

Implementation

Energy efficiency measures can be achieved through ordinance amendments, for example, through amendment of the Building Code. Compliance with heightened energy efficiency standards could be achieved through building inspection prior to final inspection.

Air and Energy Regulatory Measure #3 - Maximize end-user water efficiency throughout Santa Barbara County by requiring upgrades on all development projects.

Since the transportation and treatment of water requires energy, reducing water consumption results in energy savings and hence GHG emissions reductions. Simple water efficiency measures, such as low-flow toilets and showers, as well as more involved measures, such as gray water and rainwater capture systems, both can result in energy and emissions savings to the degree that energy used to treat and move water is from non-renewable sources. This measure could require new development projects to incorporate minimum water efficiency measures. The intent of this measure would be to achieve a minimum standard for all development. The measure could be paired with incentive measures that target higher reductions. Given the relatively slow rate of new development and the small percentage of the total building stock that new building represents, this measure is likely to achieve only low to moderate GHG reductions overall in the near and mid-term.

Implementation

Minimum water efficiency measures can be achieved through ordinance, for example, through amendment of the Building Code. Compliance with heightened energy efficiency standards could be achieved through building inspection prior to occupancy.

Measure Type	Regulation
GHG Reduction Potential	Low
Reduction Quantifiable	Yes
Cost Estimate	High

Table 18. Air and Energy Emission Reduction Measure Summary Table

Air and Energy	Measure Type	GHG Reduction Potential	Reduction Quantifiable	Cost Estimate
Incentive Measures				
Air and Energy Incentive Measure #1 - Adopt a policy or program that offers incentives (such as streamlined permitting, permit waivers, or fee waivers) to encourage a switch in electricity generation from fossil fuels to renewable sources through small-scale renewable electricity generation.	Incentive	High	Yes	Low
Air and Energy Incentive Measure #2 - Promote the use of clean alternative energy production (renewable energy sources, methane recovery at landfills, waste-to-energy production) by encouraging development of larger-scale renewable electrical generation facilities.	Regulation or Hybrid	High	Yes	Moderate
Air and Energy Incentive Measure #3 - Maximize energy efficiency throughout the unincorporated County through incentivizing energy efficient retrofits of existing structures.	Incentive	High	Yes	Moderate
Air and Energy Incentive Measure #4 - Support or provide tax credits, grants, loans and other incentives to assist the public, businesses and local agencies for the purchase of energy efficient equipment.	Incentive	High	Yes	Moderate
Air and Energy Incentive Measure #5 - Establish public outreach (elementary school component, public workshops, etc.) and employee education mechanisms to teach about energy efficiency and other climate-related initiatives.	Incentive	High	No	Low
Regulatory Measures				
Air and Energy Regulatory Measure #1 - Maximize energy efficiency throughout Santa Barbara County through energy efficient upgrades on all development projects.	Regulation or Hybrid	Low-moderate	Yes	Moderate
Air and Energy Regulatory Measure #2 - Replace inefficient appliances, such as natural gas and propane space and water heating with more efficient and/or alternative fuel appliances, such as electric heat pump and solar water heaters.	Regulation or Hybrid	High	Yes	Moderate
Air and Energy Regulatory Measure #3 - Maximize end-user water efficiency throughout Santa Barbara County by requiring upgrades on all development projects.	Regulation	Low	Yes	High

3.3.3 Land Use and Transportation

The State’s GHG emissions inventory has determined that 36% of GHG emissions in the state are tied directly to transportation. These emissions can be reduced through three basic measures: producing more fuel efficient vehicles, requiring stricter fuel standards, and by decreasing the number of vehicles miles travelled. To reduce GHG emissions from transportation, the State is actively working to implement the first two measures through Pavley standards (placing stricter tailpipe emission standards on vehicles), implementing a low carbon fuel standard, and increasing vehicle efficiency (sustainable tire practices, reduction on engine load). The development of a SCS through the regional MPOs, as required by SB 375, is one implementing action that works to reduce GHG emissions by reducing vehicle miles travelled. However, local governments are uniquely positioned to create and implement measures to reduce vehicle miles travelled through their local land use authority. The measures presented in this section are designed to affect where jobs and housing are placed and how people get from their homes to work and to commercial centers every day. Designing communities with well thought out land use patterns can dramatically decrease the amount of vehicle miles travelled and therefore have a direct effect on GHG emissions. Moreover, a well developed multi-modal transportation infrastructure that is convenient and user friendly can also decrease vehicle miles travelled. Public transit, walking, cycling, telecommuting, flex scheduling, ride-sharing, and car sharing are all programs could decrease greenhouse gas emissions.



Incentive Measures

Land Use and Transportation Incentive Measure #1 – Create additional, or improve existing, car-sharing and ride-sharing programs.

The County already provides opportunities for car-sharing and ride-sharing programs which help reduce GHG emissions. In the category of car-sharing, the RDA recently launched a 3-year car share pilot program in partnership with Zipcar in Isla Vista (discussed in Section 3.2.2). The County has also recently approved developments within downtown Isla Vista with reduced parking requirements in exchange for the provision of dedicated shared vehicles for the use of onsite residents.

Ample ride-share opportunities exist in the County. The County has worked cooperatively with CalTrans and other transit organizations to provide strategically placed ride-share parking lots throughout the County, including the rideshare program promoted by SBCAG in their Traffic Solutions division. Additionally, Traffic Solutions in coordination with the Community Environmental Council (CEC) is beginning to conduct a dynamic ridesharing pilot project. This cutting edge project will use cell phones and internet technology to organize real time, on demand

Measure Type	Incentive
GHG Reduction Potential	Low
Reduction Quantifiable	No
Cost Estimate	Low

ridesharing. The project expands on current successful carpool matching efforts that work well with 9-5 commuters and makes it easier for those with complex schedules to find carpooling partners. The pilot project will target two congested corridors on Highway 101, between Isla Vista/UCSB and SBCC, and Ventura and the South Coast. It will use preferential parking and financial incentives to encourage a critical mass of people to use the system, so that commuters can tap into the thousands of vehicles travelling back and forth on these two routes. If the pilot is successful, Traffic Solutions is interested in expanding the pilot to other routes across the County.

While all of these program and projects are already in place, there is opportunity for improvement with both car-sharing and ride-sharing. The County should continue to work with local jurisdictions to further improve ride-sharing facilities. If the dynamic ride-share pilot project being conducted by the CEC and Traffic Solutions is successful, the County could work with Traffic Solutions to expand the program throughout the County. The County can also expand the allowance of car-sharing programs in exchange for parking reductions and/or other development incentives, if ongoing monitoring indicates that car-share programs already approved by the County in Isla Vista result in tangible reductions in local vehicle trips.

Implementation

Study the effectiveness of the car-share program recently launched in Isla Vista. Determine the success of the program and develop a method to launch additional programs in other communities or in the region through coordination with SBCAG.

Monitor the dynamic ridesharing pilot project being undertaken by Traffic Solutions and the CEC. If the pilot project is found to be successful, the County should work with Traffic Solutions and the CEC to expand the program to accommodate those interested in ride-share all over the County, especially commuters traveling between North County and the South Coast.

Land Use and Transportation Incentive Measure #2 –Work cooperatively with major local employers to offer incentives and services which decrease auto commuting.

Single-occupant auto commuting is a major contributor to total GHG emissions throughout the County and the nation. The County has instituted some programs to incentivize other forms of transportation. For example, existing County policy as well as the County’s Memorandum of Understanding with the labor unions provides two additional vacation days a year for municipal employees who use an alternative form of transportation (such as biking, walking, public transit, or carpooling). Chapter 23A of County Code, Transportation Demand Management (TDM) Program, was adopted as a joint coordinated program with the

Measure Type
Incentive

GHG Reduction Potential
Moderate

Reduction Quantifiable
No

Cost Estimate
Low

City of Santa Barbara to reduce traffic congestion and improve air quality. The TDM program requires employers who have 20 or more employees to implement a TDM program and achieve and maintain certain employee participation and vehicle occupancy rates. The current program only includes the unincorporated County and South Coast private businesses. The County offers additional vacation time to employees who commute to work in a method other than single-occupant vehicles. Additionally, some departments offer their employees the option to work flexible schedules. The expansion of such programs may result in significant reductions in GHG-emitting vehicle commutes. Such programs could be rewarded by County policies to allow reduced parking or other benefits for employers who meet or exceed the goals of the TDM or other related GHG reduction programs.



Implementation

Improve on outreach to employers in the unincorporated County to facilitate increased participation in programs that encourage alternative forms of transportation to and from work or provide alternative work schedules, which reduce the number of days employees commute in single occupancy vehicles.

Land Use and Transportation Incentive Measure #3 –Enhance bicycle paths and connections to promote the use of bicycles as an alternative to vehicular transportation.

The use of bicycles as an alternative to automobile transportation is a primary method by which the County can quickly and substantially reduce its GHG emissions. For example, in 2008, 6.4% of commuters in the City of Portland, Oregon used bicycles.

Currently, the County requires the development of new roads to include the provision of bicycle lanes and through the community plan process encourages the development of community-wide bicycle connections. The County could consider the use of more aggressive promotion of critical bicycle route connections. For instance, the County could offer development incentives such as reduced fees, reduced parking, reduced setbacks, tax breaks and other benefits for property owners who provide publicly accessible bicycle rights-of-way across their properties; that offer their employees biking facilities such as secure and covered bike storage areas, maintenance tools, or locker rooms for showering and changing clothes; or that have programs to promote bike use such as increased vacation leave, guaranteed ride homes, or a fleet of bikes at work.

Implementation

Review policies in the Comprehensive Plan and ordinances related to bicycle paths, connections, storage and services, and strengthen such policies if need.



Measure Type	Incentive
GHG Reduction Potential	High
Reduction Quantifiable	No
Cost Estimate	Low

Measure Type

Incentive

GHG Reduction Potential

High

Reduction Quantifiable

No

Cost Estimate

Moderate

Land Use and Transportation Incentive Measure #4 –Promote the use of alternative fuel vehicles and plan for the development of alternative fuel infrastructure.

The recent proliferation of hybrid drive vehicles, and the expected increase in commercially viable electric vehicles (EVs), should provide a substantial opportunity for communities to reduce GHG emissions from vehicle use. The Santa Barbara area has been established as one of a few early target markets for electric vehicles, with the first new battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEV) on the market in late 2010. The vehicles are estimated to produce up to 70% less GHG emissions than traditional internal combustion engine vehicles.

In an effort to reduce its own carbon footprint, as well as reduce fleet fuel costs, the County already operates several hybrid drive vehicles as part of its fleet. The County can further reduce its carbon footprint through replacement of older, less fuel efficient vehicles in the County fleet with EVs. Installation of EV charging stations in employee parking lots could allow commuters from neighboring communities to use EVs. Additionally, the County could also consider allowing alternative fuel vehicles to park in municipal parking facilities at no or reduced cost.

In the future the County can encourage private organizations and citizens to use such alternative fuel vehicles, including EVs. The promotion of such vehicles could be achieved by the use of policies which offer development incentives for the design of projects with preferential parking for alternative fuel vehicles and charging stations for electric vehicles. Additionally, the County could consider amending the Building Code to require the installation of proper infrastructure on new residential projects. If EV infrastructure cannot be sufficiently supplied to the community through development incentives, the County could consider development and building standards for certain projects. For example, the Building Code could be amended to require new single-family residences to install the necessary electrical infrastructure (generally a dedicated 220V circuit) in garages for at-home charging. Multi-family or mixed-used developments over a certain size could be required to provide a certain number of parking spaces with EV chargers.

Similarly, the County could work with businesses to encourage the use of alternative fuel vehicles for both employees and customers through preferential parking and providing charging stations. Additionally, the County can begin to plan for alternative fuel infrastructure by identifying land use needs and appropriate sites for such facilities.

Implementation

There are many options to promote the use of alternative fuel vehicles and develop the infrastructure for electric vehicles. As a first step, the County should consider joining Project Get Ready, an initiative led by

the Rocky Mountain Institute to prepare cities for the introduction of the PHEV. Joining Project Get Ready, provides jurisdiction with support and information sharing on best practices related to developing and promoting the use of PHEV.

To start, the County could develop policies for inclusion in the CAP that provide incentives to developers who include preferential parking or charging stations for electric vehicles on their projects; and work to identify land use needs and locations for future alternative fuel infrastructure. The County could also lead by example by adding EVs to its vehicle fleet and identify opportunities to install charging stations on County-owned property. Charging stations installed by private vendors on leased County property which is open to the public also could provide the County with a revenue stream.

Land Use and Transportation Incentive Measure #5 –Promote the development of commuter rail connections between employment centers.

One of the most efficient methods of providing high capacity public transit is through the use of commuter rail systems. Such facilities have been used throughout Western Europe, Asia, and within major US cities to provide public transit opportunities with relatively low per capita carbon emissions. Opportunities for the development of such commuter rail systems within the County have been explored and found to be preliminarily feasible as part of the 101 in Motion project headed by SBCAG. Utilizing the existing tracks, the 101 in Motion project proposes to add commuter rail service from Camarillo/Oxnard to Goleta with stops in Carpinteria, Santa Barbara and Goleta. There are still numerous hurdles to complete before the commuter rail service can be installed. Additionally, the proposed commuter rail system would terminate in Goleta and provides for opportunities to explore expanding the system towards the North County and San Luis Obispo County.

Implementation

Support and encourage the efforts by SBCAG to implement adding commuter rail service from Camarillo/Oxnard to Goleta. Continue to work with SBCAG and neighboring regions, such as Ventura County and San Luis Obispo County to get the proposed commuter rail system implemented and determine interest and feasibility of expanding to San Luis Obispo or North County.

Land Use and Transportation Incentive Measure #6 –Work to enhance public transportation routes and options.

Within Santa Barbara County and the greater Tri-County area, buses currently provide the most widespread network of public transportation. In FY 2006-2007, a total of 9,739,272 rides were provided by public transit operators. Of this total number, approximately 7.5 million rides

Measure Type	Incentive
GHG Reduction Potential	High
Reduction Quantifiable	No
Cost Estimate	High

Measure Type

Incentive

GHG Reduction Potential

High

Reduction Quantifiable

No

Cost Estimate

High

were provided by The Santa Barbara Metropolitan Transit District and 1.5 million rides from the North County transit agencies. Express commuter bus routes have been established between Ventura, Santa Barbara, the Santa Ynez valley, Lompoc, Santa Maria, Vandenberg Air Force Base, and San Luis Obispo. The use of these express buses provides an attractive alternative to single-occupant vehicle commuting. The County should consider programs which could increase the ridership of buses by expanding their service area, offering more flexible pick-up and drop-off times and locations, and improving transit stop facilities and connections. The County could review the need for multimodal connection hubs that allow access from one form of transportation to another, such as providing ample bike parking near transit hubs. The County should also explore the feasibility of transportation options such as the use of high-speed rail or dedicated bus lanes as changes in technology, economic conditions, and population distribution affect the viability of such transportation methods.

Implementation

Work with local public transportation providers to expand their services and offer more flexible and convenient routes and pick-up times. This effort could also include completing a study to determine the interest from the public in certain bus routes and times.

Regulatory Measures

Land Use and Transportation Regulatory Measure #1 – Encourage urban development either as infill or adjacent to existing urban development.

Measure Type

Regulation

GHG Reduction Potential

Low

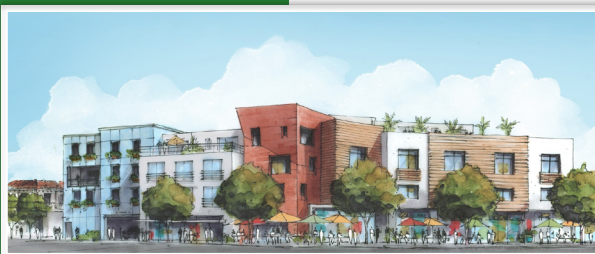
Reduction Quantifiable

Yes

Cost Estimate

Low

One of the most effective ways to decrease the County’s GHG emissions over a long term planning period is to limit urban development patterns to existing urban areas. By encouraging compact growth that is within or adjacent to existing compact urban areas, vehicle commute distances are reduced, alternate forms of human-powered transportation (e.g., bicycle, walking, etc.) become more feasible, and it becomes physically easier and more fiscally sound to provide mass transit connections between urban nodes. Additionally it is easier and more efficient to build and maintain basic services, such as water, sewer, schools, and fire protection, to development within the existing urban boundaries. The County’s land use maps already define designated areas for urban, semi-rural, and rural development. In compliance with the Study future development within urban areas could be encouraged while new development adjacent to urban areas would only occur if inventories indicate a need for more land, and semi-rural and rural areas would be reserved for agriculture and open spaces uses.



Visualization of project The Loop in Isla Vista

Implementation

Maintain and strengthen the existing policies in the Comprehensive Plan that encourage development within or adjacent to the urban boundary.

Land Use and Transportation Regulatory Measure #2 – Adopt CEQA thresholds for greenhouse gas emissions.

Recent State Legislation, SB 97, requires local jurisdictions to analyze impacts related to GHG emissions under CEQA review. In response to SB 97, the State Office of Planning and Research (OPR) promulgated new regulations on March 18, 2010 amending the CEQA Guidelines to address evaluation of GHG emissions in CEQA documents. Although the new regulations do not require lead agencies to adopt significance thresholds with respect to GHG emissions, they do require lead agencies to make significance determinations for such emissions.

In absence of Santa Barbara County inventory data, the Planning and Development Department has promulgated interim guidelines for use by planners in evaluating GHG emissions based on the BAAQMD’s adopted thresholds of significance. These guidelines will be used until Santa Barbara County GHG emissions inventory data is available and significance thresholds are developed and formally adopted. Once the GHG emissions inventory has been completed, the County will possess the analytical resources necessary to develop a Santa Barbara County specific threshold of significance. This threshold could be adopted as part of the CAP, discussed in Section 4.1.

Implementation

Monitor activity by other jurisdictions throughout the state in anticipation of the development and adoption of thresholds of significance for GHG emissions. Complete research on GHG emission levels for development projects in the unincorporated County. Using the GHG emissions inventory as a baseline, determine a CEQA threshold for GHG emissions that is low yet reasonable at attain. Include the proposed threshold of significance in the Climate Action Plan.

Land Use and Transportation Regulatory Measure #3 – Review the Comprehensive Plan to determine the extent to which it promotes GHG emission reductions. Recommend amendments to improve policies and implementation measures to promote GHG emission reductions.

The County’s Comprehensive Plan has evolved over the last thirty years to include: thirteen Elements, eight Community Plans, and four “supplemental” stand-alone documents adopted as amendments to various Elements. Several Elements were originally adopted in 1979/1980 while others have been developed and adopted throughout the 1980s and 1990s. Additionally, several Community Plans, adopted as amendments to the Land Use Element or Coastal Land Use Plan, were completed in the 1990s and 2000s. Accordingly, much of the Comprehensive Plan was developed well before the causes and effects of global climate change were well researched and understood. As a result, it is necessary to review the Comprehensive Plan to ascertain which policies may or may not assist in the reduction of GHG emissions. Ultimately, the basic tenets of the

Measure Type	Regulation
GHG Reduction Potential	Moderate
Reduction Quantifiable	Yes
Cost Estimate	Moderate

Measure Type	Regulation
GHG Reduction Potential	Moderate
Reduction Quantifiable	No
Cost Estimate	Moderate/High

Comprehensive Plan that encourage development within urban boundaries and the preservation of rural agricultural areas provides a foundation well suited to the reduction in GHG emissions. However, the specific policies found throughout the various Comprehensive Plan Elements should be reviewed and possibly amended in response to emerging Climate Change legislation and best practices. Amendments could include strengthening existing policies which already promote GHG emission reductions and deleting or modifying policies which hinder GHG emission reductions.

Implementation

Review the current Comprehensive Plan and develop recommendations for amendments to each element to be completed as part of the Climate Action Plan.

Land Use and Transportation Regulatory Measure #4 – Reduce GHG emissions from new development by adopting principles and policies which encourage and expedite the permitting of mixed-use, infill, and transit-oriented development with jobs and housing co-located together where feasible or in close proximity (walking/biking distance) to transit facilities.

As previously mentioned, the encouragement of compact urban development is a critical tool in minimizing GHG emissions from local commuting trips. One of the most compact forms of urban development is vertical mixed-use, with commercial space on the lower floors and residential units provided above. The County has already taken significant steps to encourage the development of such mixed-use projects. For example, the County’s IVMP and proposed form-based code for the Bell Street Corridor in Los Alamos both provide substantial opportunities for mixed-use development. Additionally, one of the County’s most common commercial zone districts, C-2, allows for mixed-use development as well. The County can leverage this previous experience and success with mixed-use development and develop policies that further the growth of such compact development types in other areas of the region. Additionally, focusing development in close proximity to transit facilities creates a dynamic by which transit facilities will access a greater customer base with fewer facilities, making such facilities more feasible economically. Additionally, the County could encourage new development contain transit facilities, such as park and rides or bus stops. Specifically, the County can utilize the community plan update process as an opportunity to create additional mixed-use, infill, and transit-oriented development opportunities.

Implementation

Develop policies that encourage and promote mixed-use and transit-oriented development as part of the Climate Action Plan and include these policies in the community planning process.

Measure Type	Regulation
GHG Reduction Potential	Moderate
Reduction Quantifiable	No
Cost Estimate	Moderate/High

Table 19. Land Use and Transportation Emission Reduction Measure Summary Table

Land Use and Transportation	Measure Type	GHG Reduction Potential	Reduction Quantifiable	Cost Estimate
Incentive Measures				
Land Use and Transportation Incentive Measure #1 – Create additional, or improve existing, car-sharing and ride-sharing programs.	Incentive	Low	No	Low
Land Use and Transportation Incentive Measure #2 – Work cooperatively with major local employers to offer incentives and services which decrease auto commuting.	Incentive	Moderate	No	Low
Land Use and Transportation Incentive Measure #3 – Enhance bicycle paths and connections to promote the use of bicycles as an alternative to vehicular transportation.	Incentive	High	No	Low
Land Use and Transportation Incentive Measure #4 – Promote the use of alternative fuel vehicles and plan for the development of alternative fuel infrastructure.	Incentive	High	No	Moderate
Land Use and Transportation Incentive Measure #5 – Promote the development of commuter rail connections between employment centers.	Incentive	High	No	High
Land Use and Transportation Incentive Measure #6 –Work to enhance public transportation routes and options.	Incentive	High	No	Moderate/High
Regulatory Measures				
Land Use and Transportation Regulatory Measure #1 – Encourage urban development either as infill or adjacent to existing urban development.	Regulation or Hybrid	Low	Yes	Low
Land Use and Transportation Regulatory Measure #2 – Adopt CEQA thresholds for greenhouse gas emissions.	Regulation	Moderate	Yes	Moderate
Land Use and Transportation Regulatory Measure #3 – Review the Comprehensive Plan to determine the extent to which it promotes GHG emission reductions. Recommend amendments to improve policies and implementation measures to promote GHG emission reductions.	Regulation	Moderate	No	No
Land Use and Transportation Regulatory Measure #4 – Reduce GHG emissions from new development by adopting principles and policies which encourage and expedite the permitting of mixed-use, infill, and transit-oriented development with jobs and housing co-located together where feasible or in close proximity (walking/biking distance) to transit facilities.	Regulation	Moderate	No	Moderate/High



3.3.4 Green Building

This section discusses measures that can be implemented regarding building design, construction, operation and maintenance. There are certain practices that can be implemented that can decrease GHG emissions through energy efficiency, water efficiency, a reduction in the waste involved with building construction and operation, and the types of building materials that are used.

Incentive Measures

Green Building Incentive Measure #1 –Promote and facilitate the installation of energy efficient materials and equipment which substantially exceed the requirements of Title 24 for all remodels/retrofits.

Measure Type	Incentive
GHG Reduction Potential	High
Reduction Quantifiable	No
Cost Estimate	Low

Similar to the Air and Energy Regulatory Measure #1 discussed above, the County could consider providing incentives and assistance for developers and property owners who choose to provide energy efficiency improvements above and beyond what is already explicitly required by the County. This would represent a higher tier of energy efficiency upgrades that, due to the elevated cost, would not be explicitly required by County ordinances or Building Codes. Instead the County could provide assistance or incentives for property owners and developers who have the interest and ability to pursue such upgrades. These could include projects which did not trigger the set threshold discussed in Air and Energy Regulatory Measure #1 below, i.e. below the threshold square footage, or which further exceed energy efficiency requirements. Such assistance could involve such simple steps as increasing public awareness of rebates and tax benefits for energy efficiency upgrades or provide permit streamlining through the Innovative Building Review Program. Additionally, the County’s emPowerSBC program provides property owners with low interest loans for the home energy retrofits and solar system installations.

Implementation

Amend existing County Code to include Reach Codes for energy efficient upgrades that go beyond the minimum energy standards. Provide incentives for property owners and developers who pursue these higher standards.

Green Building Incentive Measure #2 –Consider establishing permit streamlining or incentive programs for projects that are LEED certified or equivalent.

The County already provides a streamlined permit process for developments which include energy efficiency improvements above Title 24 and other energy efficient features outside the purview of Title 24. This incentive is currently administered through the County’s IBRP. The County should consider expanding the existing IBRP to include incentives for projects which achieve LEED certification and other sustainable standards.

Implementation

Expand the existing IBRP program to provide incentives for all types of green or sustainable development including developers who pursue Reach Codes, an adopted code that is above the minimum requirements, or as discussed in Green Building Incentive Measure #1.

Green Building Incentive Measure #3 – Encourage the use of alternative, energy efficient construction types (straw bale, insulated block, rammed earth, pumice-crete, etc.), especially using locally available materials.

Since the early 1900s, the vast majority of the nation’s housing stock, especially detached single-family homes, has been constructed with traditional wood-frame techniques. This method incorporates the use of wood framing supported by concrete footings or slabs and sheathed in plywood. However, as the technology of home building techniques has evolved, several new construction methods and materials present unique opportunities to achieve remarkably higher energy efficiency at relatively low cost. Specifically, the use of straw bale walls, insulated block, and rammed earth provides a thermal mass which achieves a level of insulation that cannot be achieved by conventional wood framing. In addition, such materials are often available locally so that they cost less and require less energy to transport to the building site. Some of these materials provide associated co-benefits in that they may seem more attractive as well as are more durable and longer lasting than wood-frame construction. The County should encourage the use of such alternative construction techniques.

Implementation

Amend the Innovative Building Review Program to provide incentives for the use of alternative, energy efficient construction types.

Measure Type
Incentive

GHG Reduction Potential
High

Reduction Quantifiable
No

Cost Estimate
Moderate

Measure Type
Incentive

GHG Reduction Potential
Moderate

Reduction Quantifiable
Yes

Cost Estimate
Low

Measure Type

Incentive

GHG Reduction Potential

Moderate

Reduction Quantifiable

No

Cost Estimate

Low

Green Building Incentive Measure #4 –Consider providing incentives for native, drought-tolerant landscaping (requiring less water, fertilizers and pesticides, and hence less energy to transport).

While substantial focus for energy efficiency is centered on improvements to existing and proposed structures, changes to the methods by which landscaping is installed and maintained can provide substantial energy usage reductions. This is a direct result of the fact that a significant proportion of the State’s total energy consumption is devoted to the treatment and transportation of water. Therefore, any reduction in the usage of water would also result in a reduction of statewide energy consumption. Reductions can be made through the installation or replacement of landscaping with drought-tolerant species, low-flow irrigation systems, rain sensors, rainwater harvesting systems, and other water conserving measures. The County already requires native landscaping on new projects, to some extent, through policies in the Comprehensive Plan and Board of Architectural Review Guidelines, but there is ample opportunity to strengthen these policies or provide incentives for project applicants who exceed minimum requirements.

The State adopted the Water Conservation in Landscaping Act (AB 1881) in 2006 for the purpose of implementing landscape maintenance practices that foster long-term landscape water conservation that include initial landscape plan design, performing routine irrigation system repair and adjustment, conducting water audits and prescribing the amount of water applied per landscape acre. In adopting the Act, the policy of the state is to promote the conservation and efficient use of water and to prevent the waste of this valuable resource. To implement this policy, in 2009 the Department of Water Resources developed a model water efficient landscape ordinance for use by local agencies throughout the state. As of January 1, 2010, the model ordinance became effective in each local agency unless that agency had completed the following: 1) adopted their own water efficient landscape ordinance, 2) this ordinance is at least as effective in conserving water as the model ordinance, and 3) the local agency had documented their action with the Department of Water Resources.

As of January 2010, the state model ordinance became effective in Santa Barbara County for new and rehabilitated landscape projects associated with certain development proposals as defined under the model ordinance. The County Planning and Development Department is preparing to adopt a County ordinance to tailor the model ordinance to local rules and development review processes for both coastal and inland areas, including applicability to all Community Plans. The ordinance will be reviewed by both the County Planning Commission and Montecito Planning Commission before adoption by the BOS, anticipated in Spring 2011. The County should consider establishing incentive programs which encourage project applicants to go beyond the minimum requirements.

Implementation

Provide permit streamlining incentives, rebates, or other incentives to landowners and developers who landscape with native, drought-tolerant landscaping or other landscaping methods that are proven to use less water.

Green Building Incentive Measure #5 –Consider adoption and implementation of a green building ordinance, with a voluntary component, for all new construction with carbon neutrality as a primary goal.

As previously mentioned the County could consider the adoption of a green building ordinance which provides a local program for the development of energy efficient building stock. While a portion of this ordinance could include elements that are requirements, another portion of the ordinance could provide voluntary green building improvements with net Carbon neutrality as the ultimate achievement. Since the development of carbon neutral homes and buildings can be a costly endeavor given the market rate for current power generation technology (e.g., photovoltaic solar panels) this portion of the ordinance would only be voluntary and could include incentives and assistance for interested developers and property owners. Assistance could include access to low-interest financing through the County’s emPower program, public information about emerging energy efficiency technologies, etc.

Implementation

Develop a green building ordinance that includes standards for voluntary improvements. Provide greater incentives through the IBRP program to property owners and developments who achieve this higher standard.

Regulatory Measures

Green Building Regulatory Measure #1 –Consider requiring the installation of energy efficient materials and equipment which substantially exceed the requirements of Title 24 for all remodels/retrofits which exceed a given threshold.

While the State has systematically increased the efficiency of new homes through the application of Title 24 energy conservation requirements, much of the County’s existing housing stock lacks modern energy efficiency upgrades. The County of Santa Barbara, like much of the State, has a significant amount of housing that was built prior to 1980. The construction of these homes preceded the application of Title 24 requirements and most have little to no insulation, antiquated heating, ventilating and air conditioning (HVAC) systems, and high energy consumption incandescent lighting. The County should consider local amendments to the Building Code to require some level of energy efficiency improvements to existing buildings when applications for remodels or retrofits are received which exceed a given threshold, for example 500 square feet. It should be recognized that the cost of these mandatory improvements be proportionate

Measure Type	Incentive
GHG Reduction Potential	High
Reduction Quantifiable	No
Cost Estimate	Moderate

Measure Type	Regulation
GHG Reduction Potential	Low
Reduction Quantifiable	Yes
Cost Estimate	Moderate

to the scope of work being proposed. Otherwise, the requirements of expensive energy efficiency upgrades as a result of minor home alterations may present an undue fiscal burden upon home owners. However, ample opportunities to improve energy efficiency at low cost are available, including the replacement of incandescent bulbs with compact fluorescent, LEDs, or equivalents, installation of low-flow toilets, installation of blow-in insulation, sealing of exposed duct work, etc.

Implementation

Amend existing County Code to require energy standards more stringent than Title 24.

Green Building Regulatory Measure #2 – Adopt and implement a green building ordinance for all new residential and commercial buildings.

With the emerging importance of energy efficient and environmentally sustainable construction as a contributor to GHG reduction, various methods have been developed to recognize green building techniques. This includes the development of LEED certification and Energy Star-rated buildings. While these green building verification techniques provide a foundation for the development of a more environmentally sustainable building stock, such broad programs may not address regional or community-specific priorities. To bridge this gap between local norms and values and nationwide green building programs, the County should consider a green building ordinance for residential and commercial construction. This ordinance could put standards in place to achieve the development of green building in a phased approach, which is tailored to provide sustainable building opportunities to parties of all economic spectrums.

Implementation

Develop and adopt a green building ordinance that could establish local standards for green building construction.

Measure Type Regulation
GHG Reduction Potential High
Reduction Quantifiable No
Cost Estimate Moderate

Table 20. Green Building Emission Reduction Measure Summary Table

Green Building	Measure Type	GHG Reduction Potential	Reduction Quantifiable	Cost Estimate
Incentive Measures				
Green Building Incentive Measure #1 – Promote and facilitate the installation of energy efficient materials and equipment which substantially exceed the requirements of Title 24 for all remodels/retrofits.	Incentive	High	No	Low
Green Building Incentive Measure #2 – Consider establishing permit streamlining or incentive programs for projects that are LEED certified or equivalent.	Incentive	High	No	Moderate
Green Building Incentive Measure #3 – Encourage the use of alternative, energy efficient construction types (straw bale, insulated block, rammed earth, pumice-crete, etc.), especially using locally available materials.	Incentive	Moderate	Yes	Low
Green Building Incentive Measure #4 – Consider providing incentives for native, drought-tolerant landscaping (requiring less water, fertilizers and pesticides, and hence less energy to transport).	Incentive	Moderate	No	Low
Green Building Incentive Measure #5 – Consider adoption and implementation of a green building ordinance, with a voluntary component, for all new construction with Carbon neutrality as a primary goal.	Incentive	High	No	Moderate
Regulatory Measures				
Green Building Regulatory Measure #1 – Consider requiring the installation of energy efficient materials and equipment which substantially exceed the requirements of Title 24 for all remodels/retrofits which exceed a given threshold.	Regulation	Low	Yes	Moderate
Green Building Regulatory Measure #2 – Adopt and implement a green building ordinance for all new residential and commercial buildings.	Regulation	High	No	Moderate

3.3.5 Resource Conservation

Resource conservation is an important component of any GHG reduction strategy. Soil, trees, and other vegetation act as carbon sinks, sequestering carbon dioxide from the atmosphere. Therefore, measures could be proposed that not only seek to increase the efficiency of agricultural operations through more sustainable practices and promoting the use of energy efficient equipment, but also seek to protect lands that sequester carbon.



Furthermore, improved waste management at the local and individual level is a necessary part of a successful reduction strategy, which is why measures such as home composting education, increased recycling rates, and sustainable agricultural practices could be proposed. With increased conservation of resources through reusing and recycling materials come less demand for raw materials and less greenhouse gases generation from future production and transportation of new materials. This section describes the measures that could be proposed to help conserve resources and reduce associated greenhouse gas emissions.

Incentivize Measures

Resource Conservation Incentive Measure #1: Promote the development of an urban forest.

The development of urban forests can play a vital role in reducing CO₂ in the atmosphere through carbon sequestration and reducing GHG emissions by conserving energy that would normally be used for heating and cooling. Urban forests also provide other benefits to air quality. The USDA Forest Service estimates that if 50 million trees were planted, it would sequester about 4.5 million tons of CO₂ annually.

The Climate Action Reserve has developed an Urban Forest Project Protocol which the County could utilize to develop urban forests, have their reductions verified, and then sold in a future cap-and-trade program or retired.

Implementation

Adopt policies in the Comprehensive Plan, through the Community Plans if available, promoting the development of urban forests.

Measure Type

Incentive

GHG Reduction Potential

Moderate

Reduction Quantifiable

Yes

Cost Estimate

Low

Resource Conservation Incentive Measure #2: Support and promote local food production and distribution.

Food produced elsewhere and imported to local stores and restaurants requires more energy due to its transportation. Local food production could minimize the energy required for food transportation with a decrease in vehicle miles travelled to get the food from the farm to the consumers table. It could also provide the co-benefits of delivering fresher food to the stores and consumer and support for local agricultural economy.

Implementation

Research the food distribution practices used by major grocery retailers and work to lift any impediments to local distribution currently in place. Additionally, provide education to the public about the benefits of local food production. Develop a coordinated marketing program to incentivize the use of local produce and create a recognition program for local retailers who supply their stores and restaurants with locally produced food. Implementation of this ERM should include input from the Agricultural Advisory Committee (AAC).

Resource Conservation Incentive Measure #3: Promote edible landscapes, neighborhood gardens, and backyard gardening.

Local edible landscapes, neighborhood gardens and backyard gardens reduce consumer reliance on produce sold in stores which has been transported into the County from other counties, states, and nations. Reducing the demand for produce obtained from outside the region could result in less produce being transported into the region and, therefore, a reduction in transportation emissions and vehicle miles travelled.

Implementation

Educate and encourage the use of backyard gardening to reduce consumer reliance on produce transported into the County from other counties, states, and nations.

Resource Conservation Incentive Measure #4: Promote the use of responsible agricultural practices such as the Good Agricultural Practices established by the United Nations Food and Agriculture Organization.

The use of responsible agricultural practices has the ability to decrease the amount of GHGs emitted from agricultural activities as well as increase carbon sequestration. Becoming more common is the use of Good Agricultural Practices (GAP) programs. Both United States Department of Agriculture (USDA) and California Department of Food and Agriculture (CDFA) have developed GAP standards which are implemented on a voluntary basis. Both the USDA and CDFA GAP standards place a heavy focus on health and safety but little focus on environmental issues. The United Nations Food and Agriculture Organization (UN FAO)

Measure Type
Incentive

GHG Reduction Potential
Moderate

Reduction Quantifiable
No

Cost Estimate
Low

Measure Type
Incentive

GHG Reduction Potential
Low

Reduction Quantifiable
No

Cost Estimate
Low

Measure Type
Incentive

GHG Reduction Potential
Low

Reduction Quantifiable
No

Cost Estimate
Low



has developed general principles for GAP which are more comprehensive. The UN FAO GAP principles cover multiple areas including: soil; water; crop and fodder production; crop protection; animal production; animal health and welfare; harvest and on-farm processing and storage; energy and waste management; human welfare, health, and safety; and wildlife and landscape. While not all of these activities result in either a reduction in GHG emissions or an increase in carbon sequestration, many of them do. Specifically, the GAP principles promote water conservation, soil management practices that increase carbon sequestration

and decrease the need for fertilizer use, energy efficiency and alternative energy practices, and waste minimization practices.

The use of responsible agricultural practices, such as those outlined in the UN FAO's GAP principles, could serve to decrease GHG as well as provide co-benefits to health and safety, crop protection, and access to certain agricultural markets which require participation in a GAP program.

Implementation

Work with the AAC to promote the development of more comprehensive GAP standards at the State and federal level. Additionally, the County could encourage the local agricultural industry to develop and adopt its own GAP standards, which are more comprehensive and provide environmental as well as other benefits.

Regulatory Measures

Resource Conservation Regulatory Measure #1: Strengthen zoning to protect carbon sequestering environments, to support local-resource based industries, such as agriculture, and protect open and native habitats to maximize their functions of flood protection, water quality, etc.

Land uses such as agriculture, forests, and other types of open space provide an avenue for carbon sequestration. Carbon dioxide will naturally transfer from the atmosphere to new biomass, such as forest trees, where it can be stored. Similarly, agricultural soils are known to act as an effective carbon sink.

Implementation

This measure can be achieved by adopting policies that support protection of agricultural lands and open space by discouraging residential development in rural areas, and encouraging transfer of development rights that exchange potential development in rural areas for development in urban areas.

Measure Type

Regulation

GHG Reduction Potential

Low

Reduction Quantifiable

Yes

Cost Estimate

Low

Resource Conservation Regulatory Measure #2: Increase reuse and recycling of goods and materials.

Landfills are a major producer of methane. The amount of methane emitted from any given landfill is tied to the amount of waste left in place to emit methane and the controls put in place at that landfill. One way to decrease methane emissions at landfills is to decrease the amount of waste sent to landfills to begin with. Recycling and the reuse of goods and materials divert those goods and materials to other uses rather than being placed in a landfill.

Implementation

Increasing the types of materials that can be recycled through curb side services provided in the unincorporated County, and providing education programs for both commercial and residential customers.

Summary Info

Resource Conservation Regulatory Measure #3: Facilitate the increased use of agriculture and open space easements through zoning, dedication of public funds, and mitigation fees.

Easements can be a means of conserving agriculture and open space. By conserving open space, a land use jurisdiction also restricts development to certain areas and limits development in the rural areas. Open spaces can also provide important carbon sequestration functions.

Implementation

This measure could be effectuated by enhancing zoning laws to promote cluster development to encourage greater use of easements or through the establishment of conversion mitigation fees where revenue is invested into forest-based GHG mitigation projects.

Measure Type	Regulation
GHG Reduction Potential	Moderate
Reduction Quantifiable	Yes
Cost Estimate	Moderate

Measure Type	Regulation
GHG Reduction Potential	Low
Reduction Quantifiable	Yes
Cost Estimate	Moderate

Table 21. Resource Conservation Emission Reduction Measure Summary Table

Resource Conservation	Measure Type	GHG Reduction Potential	Reduction Quantifiable	Cost Estimate
Incentive Measures				
Resource Conservation Incentive Measure #1: Promote the development of an urban forest.	Incentive	Moderate	No	Low
Resource Conservation Incentive Measure #2: Support and promote local food production and distribution.	Incentive	Moderate	No	Low
Resource Conservation Incentive Measure #3: Promote edible landscapes, neighborhood gardens, and backyard gardening.	Incentive	Low	Yes	Low
Resource Conservation Incentive Measure #4: Promote the use of responsible agricultural practices such as the Good Agricultural Practices established by the United Nations Food and Agriculture Organization.	Incentive	Low	No	Low
Regulatory Measures				
Resource Conservation Regulatory Measure #1: Strengthen zoning to protect carbon sequestering environments, to support local-resource based industries, such as agriculture, and protect open and native habitats to maximize their functions of flood protection, water quality, etc.	Regulation	Low	Yes	Low
Resource Conservation Regulatory Measure #2: Increase reuse and recycling of goods and materials.	Regulation	Moderate	No	Moderate
Resource Conservation Regulatory Measure #3: Facilitate the increased use of agriculture and open space easements through zoning, dedication of public funds, and mitigation fees.	Regulation	Low	Yes	Moderate



4.0

Climate Action Study Implementation

Implementation of this Study could occur through a number of existing GHG emission-related regulatory compliance initiatives as well as incentive-based program opportunities. First, this Study will serve to inform the process required to comply with SB 97, which requires the analysis of program and project level GHG emissions under CEQA. The Study can be used as a resource to identify potential GHG reduction strategies for inclusion in a CAP. Additionally, the ERMs identified in the Study could be used by the County as it works with SBCAG on the implementation of SB 375 and associated development of a regional SCS. The Study could also be used to enhance the incentive-based IBRP and in the development of a new green building ordinance. The County has secured funding from Southern California Edison to develop a CAP, a new green building ordinance and energy reach code. The funding will partially fund the development of a CAP and fully fund the development of a green building ordinance and energy reach code.

This section provides an overview of implementation actions that could be completed by the County in the short-term which maximize existing opportunities as well as, ensure compliance with State law. Long-term GHG emission efforts and initiatives may utilize the Study as a resource that provides comprehensive ERMs in the areas of air and energy, land use and transportation, green building and resource conservation. This Study and identified ERMs have been designed to provide a framework and foundation for future development and implementation of GHG emission reduction strategies in Santa Barbara County.

4.1 Climate Action Plan

A primary implementation component of the Climate Action Study is the development of a CAP or GHG Reduction Plan in compliance with the guidelines for a CAP in SB 97. SB 97 amended the CEQA to require GHG emissions be analyzed under CEQA. SB 97 allows for public agencies to analyze and mitigate the significant effect of greenhouse gas emissions at a programmatic level through adoption of a CAP. Once adopted, later project-specific environmental review documents may tier from and/or incorporate that existing environmental review for the analysis of cumulative impacts related to GHG emissions. The benefit of a local jurisdiction adopting a CAP consistent with these guidelines is that it removes the burden and cost of quantifying and analyzing GHG emissions under CEQA on a project specific basis for project applicants.

The CAP would further analyze the ERMs presented in the CAS and provide a program to meet the County's GHG emissions reduction goal to be set by the BOS as discussed in Section 1.2. The CAP will provide a quantitative analysis using a greenhouse gas emissions inventory of unincorporated lands as a baseline. A cost-benefit analysis will be applied to selected measures included in the CAP guided by an approach to economic efficiency. ERMs for implementation will be chosen based on the goal of reducing the most emissions for the least cost. Measures could be tiered and implemented based on different reduction targets. For example, all measures in the first tier would achieve the lowest reduction target. These measures would also be the easiest and cheapest to implement. The second tier would then reach a greater reduction target and include measures which achieve less reduction per dollar than the first tier and are more difficult to implement. Any number of tiers can be created depending on the different reduction target options.

The CAP would provide the County with the policy framework to reduce greenhouse gas emissions throughout the unincorporated County and provide prospective development applicants with a suite of GHG emission reductions options that may be implemented as a means to reduce cumulative greenhouse gas emission impacts. A CAP does not remove the requirement for an individual project to complete CEQA review; rather, it would provide a streamlined and transparent process. Without a CAP in place, each individual project would need to be analyzed for GHG emissions under CEQA. Without a CAP in place, the process would be much more burdensome to project applicants.

The CAP would become a component of the County of Santa Barbara Comprehensive Plan, likely the Energy Element or Land Use Element. The Energy Element (adopted in 1994) provides goals and policies that promote energy efficiency and energy conservation in the unincorporated County. A monitoring and evaluation protocol will be developed in conjunction with the development of the CAP. Following implementation of the CAP, monitoring and evaluation of the program would be completed in accordance with the protocol. A CAP annual report would be completed highlighting the performance and evaluation results and, where needed, present recommendations to improve the CAP. Additionally, the County would pursue obtaining the ICLEI Milestone Awards for each of the five milestones related to CAPs.

4.2 Enhanced Building and Energy Codes and IBRP

The County could work to pursue the development and adoption of an energy reach code, which would exceed current Title 24 requirements, and green building standards. A reach code is a code adopted by a local jurisdiction which sets standards higher than those required by Title 24. Development and adoption of both an energy reach code and green building standards would seek to achieve many of the emission reductions opportunities outlined in the Green Building ERM in this Study. Both programs could be achieved through the adoption of CALGreen, California's Green Building Standards Code, which became mandatory on January 1, 2011. Currently various elements of CALGreen are mandatory while others are voluntary. CALGreen provides minimum standards for all new development projects with increased voluntary standards at Tier 1 and Tier 2. If the County pursued adoption of CALGreen with additional requirements pulled from Tier 1 (i.e. making at least part of Tier 1 mandatory), both the goal of setting green building standards and an energy reach code could be obtained. Tier 1 requires that the energy component of the building be designed 15% above the baseline threshold. Incentives will be provided for Tier 2 and a County-specific Tier 3, to be created by the County, through expansion of the IBRP. All tiers and the prerequisites address the following areas of development and building design: planning and design (site development), energy efficiency, water efficiency and conservation, material conservation and resource efficiency, environmental quality, and environmental comfort. Prior to adoption of either energy reach code or green building standards, the County will model the additional costs of development if these new requirements were adopted. Additionally, IBRP would be expanded to include linkages to emPowerSBC. This connection would provide the community with a forum to receive advice from local experts and makes the transition towards energy efficient and sustainable development smoother.

4.3 SB 375 Implementation

The County will work with SBCAG on the implementation of SB 375. This would include coordination and collaboration with SBCAG and the other local jurisdictions to develop a SCS which will align the RTP with the RHNA. SBCAG has already taken action to shift the planning period housing cycle from a 5-year to an 8-year cycle. This will allow for County's regional transportation plan and housing elements to be updated concurrently. In September 2010, CARB set the emission reduction target at zero net increase in per capita GHG emissions. The first SCS is expected to be completed by SBCAG in 2012. Following the completion of the SCS, SBCAG will integrate it into the Regional Transportation Plan for 2014-2021. The next cycle of Housing Element updates will follow with certification planned for 2014 for the 2015-2023 cycle.

The SCS may shift housing allocations from rural regions which have limited employment opportunities to urban areas and cities which have established workforce centers such as large private businesses or public facilities. This shift would reduce GHG emissions that result from vehicle traffic by shortening the average commuting distance between residences and workforce centers.

4.4 Progress Reporting

One of the most important components to a successful greenhouse gas reduction program is to monitor progress. Without monitoring, there is no way to track whether implemented measures are successful or if they need to be improved. If results are not as predicted, monitoring and reporting on progress provides an opportunity to improve existing measures, if needed, or identify areas where new measures might need to be modified or expanded in order to have a successful greenhouse gas reduction program in place.

There are additional benefits associated with progress reporting beyond ensuring a successful program has been put in place. These include documenting emission reductions that could be used towards any future mandates to reduce greenhouse gas emissions or in a future emissions trading system. Currently California is working closely with the Western Climate Initiative, which includes involvement from six other western States and four Canadian provinces, to design a regional cap-and-trade program. Additionally, the State could place further mandates on local governments. Having taken action to reduce emissions, and having monitored and documented the emissions reductions achieved, the County would make it easier to comply with such regulations, if established. If an emissions trading system is developed in the future, it is possible that local governments will be able to offer emission reduction credits accrued from reductions that they have made for sale to buyers in the system. Local governments that have already documented reductions will have a strong advantage in this market system and may create new sources of local government revenue.

The County's monitoring program would encompass both municipal and community roles in greenhouse gas reductions. The County will build upon the databases already in place for the greenhouse gas emissions inventories for both municipal operations and unincorporated areas to monitor results. Any measure that is implemented to reduce greenhouse gas emissions would be designed, to the maximum extent feasible, in a manner that results can be measured. In certain circumstances, it will be difficult to monitor results for a given measure. However, periodic updates to the greenhouse gas emissions inventory for both municipal operations and unincorporated areas would provide the entire picture of progress made.

Sources

AB 32 Scoping Plan, California Air Resources Board, October 2008

Chicago's Guide to Completing an Energy Efficiency and Conservation Strategy, February 2009

Cities for Climate Protections Milestone Guide, ICLEI

Community Environmental Council Carbon Neutrality

Contra Costa County, Municipal Greenhouse Gas Reduction Toolkit

Energy Aware Planning Guide, California Energy Commission, December 2009

EPA, Emissions Facts: Greenhouse Gas Emissions from a Typical Passenger Vehicle

Institute for Local Governments, California Climate Action Network Best Practices, v5.0

Local Government Commission, Ahwahnee Principles

League of California Cities Climate Change Working Group, League Principles for Climate Change

Mayors and Climate Protection Best Practices, Mayors Climate Protection Center, 2009

National Governors Association, Growing with Less Greenhouse Gases- State Growth Management Policies that Reduce GHG Emissions

Public Policy Institute of California, Climate Policy at the Local Level: A Survey of California's Cities and Counties, November 2008

Sonoma County, Climate Action Plan

Santa Barbara County Comprehensive Plan

United States Conference of Mayors Best Practices Guide, January 2007

University of California Santa Barbara, Economic Forecast Project, 2010 Santa Barbara County Economic Outlook

US Mayors Handbook Climate Protection Agreement, Climate Action Handbook, ICLEI & City of Seattle & US Conference of Mayors