

community review draft

---

# napa countywide community climate action framework

**December 2009**

DRAFT



900 College Avenue  
Santa Rosa, California  
707-525-1665  
[www.coolplan.org](http://www.coolplan.org)



707 Randolph St  
Napa, California  
[www.nctpa.net](http://www.nctpa.net)



800 Hearst Avenue  
Berkeley, California 94710  
510-845-7549  
[www.migcom.com](http://www.migcom.com)

*Support from the following made this plan possible:*

Bay Area Air Quality Management District (BAAQMD), Napa County Transportation and Planning Agency (NCTPA), Napa Valley Community Foundation, and the Cities of American Canyon, Calistoga, Napa, St. Helena, Yountville, and the County of Napa.

*This report was prepared as a result of work sponsored or paid for, in whole or in part, by the Bay Area Air Quality Management District (DISTRICT). The opinions, findings, conclusions, and recommendations are those of the author and do not necessarily represent the views of the DISTRICT. DISTRICT, its officers, employees, contractors, and subcontractors make no warranty, expressed or implied, and assume no legal liability for the information in this report. DISTRICT has not approved or disapproved this report, nor has DISTRICT passed upon the accuracy or adequacy of the information contained herein*

DRAFT

# Table of Contents

|  |    |
|--|----|
| 1 Executive Summary.....   | 4  |
| I. Introduction and Background.....  | 1  |
| Climate Protection Imperative and GHG Reduction Target .....                 | 2  |
| Local Climate Change Impact.....   | 3  |
| Local Climate Protection Efforts .....                                       | 5  |
| Climate Protection Co-Benefits .....   | 7  |
| Five-Step Planning Process.....  | 8  |
| High-Impact, High-Leverage Actions .....                                     | 9  |
| II. Napa’s Carbon Footprint and Forecast.....                                | 12 |
| GHG Emissions Inventory.....   | 13 |
| 2020 GHG Emissions Forecast.....   | 17 |
| III. Policy Context for Local Climate Protection .....                       | 24 |
| The Climate Action Framework .....   | 24 |
| General Plans.....   | 25 |
| ICLEI—Local Governments for Sustainability .....                             | 25 |
| Regional Efforts .....   | 25 |
| Statewide Policies.....  | 26 |
| National.....  | 29 |
| Global .....   | 29 |
| IV. Six Goals and 53 Actions for GHG Reductions .....                        | 31 |
| Goal 1. Expand Transportation and Mobility Options (TM).....                 | 32 |
| Goal 2. Improve Buildings and Energy Efficiencies (BE).....                  | 39 |
| Goal 3. Reduce Consumption and Solid Waste (SW).....                         | 49 |
| Goal 4. Conserve Agriculture, Natural Resources, and Urban Forests (AN)..... | 56 |
| Goal 5. Increase Community Engagement (CE).....                              | 63 |
| Goal 6. Enhance Local Government Operations (LG).....                        | 66 |
| Appendix A: Summary Table of Actions .....                                   | 1  |
| Appendix B: Inventory of Napa County Greenhouse Gas Emissions .....          | 1  |
| Appendix C: Methodology – ICLEI .....  | 1  |
| Appendix D: Carbon Model.....  | 1  |
| Appendix E: Potential Impact of AB 811 Program in Napa County .....          | 1  |
| Appendix F: Glossary of Acronyms and Terms .....                             | 1  |
| Appendix H: Solid Waste GHG Emissions Analysis Summary Report.....           | 1  |
| acknowledgements .....   | 1  |

# Executive Summary

## *Our community, our future: the challenge of climate change*

Climate change is a major challenge for the 21st century. Scientific evidence increasingly shows that climate protection targets considered bold even a few years ago may now be inadequate: climate change is happening faster and on a broader scale than the world's scientists predicted just two years ago. Millions of people may experience the effects of climate change on public health, national and local economies, sea level rise and changing food, water and energy supplies.

No action—business as usual—is not an option under current State law. Although the regulatory environment is changing rapidly, it is likely that actions will be required by State Law at all levels of government.

This Community Climate Action Framework provides a consensus-based context for further more detailed planning efforts. It outlines a package of 53 actions that, when translated into locally specific programs and projects countywide, *will* help meet climate protection targets. This Policy Framework will be followed by locally appropriate implementation plans, designed for each jurisdiction, focusing on specific programs and projects.

Transforming our energy infrastructure from fossil fuels to renewables, using less energy overall, and generating less waste and fewer emissions will require a unity of purpose, innovation and commitment.

This Framework is based on a sound analytic process, uses internationally accepted greenhouse gas emissions (GHG) modeling, incorporates input from each of Napa's Cities, Town and the County, and is geared for swift implementation. Every action included met four criteria:

1. It is under local control
2. It will result in significant GHG emission reductions
3. It is cost-effective
4. It is politically feasible

Actions proposed in the Framework will pay for themselves in energy cost and other savings and are designed to promote an economy powered by more local, reliable energy; a healthier environment; healthier people; and a preserved natural environment. Attention has been given to the financial implications of the proposed actions, recognizing the significant fiscal challenges facing California communities today. This Framework has been developed to assist stakeholders in moving from planning to action, which will require the combined effort of residents, businesses, local government staff and elected officials in Napa County. These efforts will work along with vigorous actions, based on new and aggressive state legislation, being planned and underway statewide and in the Bay Area region. Communities across California are now assessing the impact of local emissions and creating similar action plans and frameworks to address this urgent issue. The Napa County Community Climate Action Framework recognizes our connection to the larger community and our responsibility to our constituents.

## Background

The principle underlying GHG emission reduction targets—and climate protection in general—is meeting the goal dictated by current scientific evidence to ensure that human societies remain in balance with the abilities of natural systems to sustain them. The amount of carbon dioxide in the atmosphere is the best single indicator of the climate crisis—the higher the concentration of carbon dioxide, the more dire the climate crisis. The concentration is now 390 parts per million and must return to 350, according to leading scientists.

Prior to 2005, California communities had a harder task setting GHG emission reduction targets than they do now. In 2005 Governor Schwarzenegger established GHG emission reduction targets for the state. In 2006 the Governor reinforced the 1990 level by 2020 target by signing into law AB 32, the Global Warming Solutions Act.

GHG emissions inventories for Napa cities and the County, completed in March 2009 in cooperation with ICLEI staff, used 2005 as the baseline year. Also shown are 2020 emissions projections if we do nothing and simply continue business as usual. The next column in the table shows the amount of emissions Napa cities and the County need to reduce from projected “do nothing” levels to meet a 2020 GHG emissions target that matches the target established by the State. The last column gives the percentage reduction required to meet AB 32 goals: a 30% countywide reduction.

### GHG Emissions: 30% Reduction Countywide

|                | 2005<br>Baseline | 1990 Level<br>(metric tons) | 2020 “Do<br>Nothing”<br>forecast | Reduction<br>Needed<br>(tons) | % Reduction<br>Needed |
|----------------|------------------|-----------------------------|----------------------------------|-------------------------------|-----------------------|
| A. Canyon      | 91,449           | 77,732                      | 152,393                          | 74,662                        | 49%                   |
| Calistoga      | 28,427           | 24,163                      | 31,480                           | 7,317                         | 23%                   |
| City of Napa   | 455,062          | 386,803                     | 544,572                          | 157,769                       | 29%                   |
| St. Helena     | 46,052           | 39,144                      | 49,541                           | 10,397                        | 21%                   |
| Yountville     | 28,305           | 24,059                      | 31,924                           | 7,865                         | 25%                   |
| Unincorporated | 550,986          | 468,338                     | 656,989                          | 188,651                       | 29%                   |
| <b>Total</b>   | <b>1,200,281</b> | <b>1,020,239</b>            | <b>1,466,900</b>                 | <b>446,661</b>                | <b>30%</b>            |

*Note that the relatively high % reduction indicated for American Canyon is based on projected increases in GHG emissions due to increased traffic **through** the city as well as increased growth that balances reduced growth elsewhere in the County and the region. Specific local reduction goals, not mandated by state regulation, will be addressed by State and Regional regulations and plans being developed now.*

Climate change is primarily a global problem influenced by an array of interrelated factors, many of which are beyond the control of local communities. Climate change is also a local problem with serious local effects foreseen for the cities and County of Napa. Local communities can also make changes that will contribute to the necessary global reduction of GHGs. Some of the possible local effects of climate change are described below.

**Sea Level Rise:** According to the San Francisco Bay Conservation and Development Commission (BCDC), the sea level in the Bay Area is expected to rise up to 55 inches during the next hundred years. BCDC's models illustrate that portions of Napa County, particularly along the Napa River, may be subject to increased flooding with just 16 inches of sea level rise.

**Agriculture:** Climate change is projected to have significant impacts on conditions affecting agriculture, including temperature, carbon dioxide, snow pack run-off, precipitation and the interaction of these elements.

**Native Plants and Wildlife:** Napa County is home to a particularly diverse population of plants. Native plants and animals are also at risk as temperatures rise.

**Water:** With warmer average temperatures, more winter precipitation will fall in the form of rain instead of snow, shortening the winter snowfall season and accelerating the rate at which the snowpack melts in the spring. The Sierra snowpack provides approximately 80% of California's annual water supply.

### ***Local Climate Protection Efforts***

In response to the threat of climate change, local communities worldwide are voluntarily reducing greenhouse gas emissions even while national and international agreements are under development. By April 2008, all six local governments in Napa County committed to this process. Over the last several years, local governments and organizations in Napa County have taken actions to reduce GHG emissions and improve energy efficiency in the County. Examples of these include:

- Napa County has pioneered a pattern of “urban-centered growth,” with powerful protection for agricultural lands and open space, sharply reducing the “sprawl” development pattern that is a principal contributor to vehicle-based GHG emissions
- Napa County has one of the highest levels of alternative energy generation per capita in the State of California
- Napa County has one of the highest landfill diversion rates in the state
- Additional efforts are included in the body of the report.

### ***Climate Protection Co-Benefits***

More than just reducing carbon emissions, climate protection will yield other important benefits for Napa County residents.

- Support the Local Economy
- Save Money
- Support a Healthy Living Environment
- Develop Local Energy Resilience
- Improve Air Quality

## Napa's Carbon Footprint and Forecast

Staff from all six Napa County jurisdictions participated in the development of a baseline Napa countywide community carbon footprint. The purpose of the baseline emissions inventory is to determine the levels of greenhouse gas emissions emitted in Napa County in 2005, the established base year for analysis and forecasting.

The community-scale Napa County inventory is based on the year 2005. When calculating the emissions inventory, all energy consumed in Napa County was included. This means that, even though the electricity used by local residents is produced elsewhere, this energy and emissions associated with it is accounted for in this inventory. The decision to calculate emissions in this manner reflects the general philosophy that a community should take full ownership of the impacts associated with its energy consumption, regardless of whether the generation occurs within the geographical limits of the community.

### 2005 Napa Countywide Community Emissions by Jurisdiction

| Jurisdiction                                | 2005 Emissions<br>(metric tons of<br>CO2 equivalents) | % of Total |
|---|---|------------|
| Yountville                                  | 28,305  | 2%         |
| Calistoga                                   | 28,427  | 2%         |
| St. Helena                                  | 46,052  | 4%         |
| American Canyon                             | 91,449  | 8%         |
| City of Napa                                | 455,062   | 38%        |
| Unincorporated Napa County                  | 550,986   | 46%        |
| <b>TOTAL 2005 NAPA COUNTYWIDE EMISSIONS</b> | <b>1,200,281</b>                                      |            |

*Together Unincorporated Napa County and the City of Napa **comprise 84% of countywide GHG emissions.***

### 2005 Napa Countywide Per Capita Emissions by Jurisdiction

| Jurisdiction                | 2005 Emissions<br>(metric tons of CO2<br>equivalents) | 2005<br>Population | Per<br>Capita<br>Emissions |
|-----------------------------|---|--------------------|----------------------------|
| Yountville                  | 28,305  | 3,400              | 8.33                       |
| Calistoga                   | 28,427  | 5,200              | 5.47                       |
| St. Helena                  | 46,052  | 6,100              | 7.55                       |
| American Canyon             | 91,449  | 14,200             | 6.44                       |
| City of Napa                | 455,062   | 76,600             | 5.94                       |
| Unincorporated Napa County* | 550,986   | 28,600             | 19.27                      |
| <b>TOTAL</b>                | <b>1,200,281</b>                                      | <b>134,100</b>     | <b>8.95</b>                |

\* The relatively high Unincorporated Napa County per capita emissions result from an ICLEI inventory methodology that attributes regional transportation emissions based on where they occur rather than where the trip originates or ends. This methodology is consistent for all jurisdictions but impacts the unincorporated area most due to the fact that the majority of road miles in Napa are in the unincorporated area.

### 2005 Napa Countywide Community Emissions by Sector

| Sector   | 2005 Emissions (metric<br>tons of CO2 equivalents) | % of Total |
|--|--|------------|
| Residential Buildings                          | 196,350  | 16%        |
| Commercial & Industrial Buildings              | 226,661  | 19%        |
| Transportation                                 | 636,724  | 53%        |
| Lawn & Garden Equipment                        | 3,616  | 0%         |
| Construction & Industrial/Commercial Equipment | 49,675   | 4%         |
| Agriculture/Farming                            | 33,046   | 3%         |
| Solid Waste                                    | 54,209   | 5%         |
| <b>TOTAL 2005 NAPA COUNTYWIDE EMISSIONS</b>    | <b>1,200,281</b>                                   |            |

The greatest opportunities for reduction are in the transportation and building sectors, because they constitute 53% and 35% of the countywide GHG emissions.



**2005 Napa Countywide Community Emissions by Source**

| Source                                       | 2005 Emissions (metric tons of CO2 equivalents) | % of Total |
|--|---|------------|
| Electricity                                  | 207,962   | 19%        |
| Natural Gas                                  | 190,513   | 17%        |
| Transportation Fuels                         | 636,724   | 57%        |
| Agriculture/Farming                          | 33,046  | 3%         |
| Solid Waste                                  | 54,209  | 5%         |
| <b>TOTAL 2005 NAPA COUNTYWIDE EMISSIONS*</b> | <b>1,122,454</b>                                |            |

\* Source total is different than sector and jurisdiction total, because it does not include data from lawn and garden equipment, construction & industrial/commercial equipment and electricity and natural gas use from suppliers other than PG&E.

**2020 GHG Emissions Forecast**

Forecasting emissions to a projected target year (most often 2020) is done to create a more accurate picture of the emission reductions necessary to meet desired targets. Because of population increase, as well as growth in the jobs and transportation sectors, emissions will experience a background change not related to policy changes made by the local government. When creating an emissions reduction target, it is therefore important to consider not only emissions in the base year, but projected emissions in the target year, as these will need to be accounted for in the policies and measures taken to reduce GHG emissions in Napa County.

Please note the forecasted growth in GHG emissions assumes that **no actions** are taken to reduce emissions. In other words, this forecast considers neither the reduction impacts from the actions contained in this Framework nor benefits of increased mileage standards or changes to vehicle fleet mix.

**2020 Napa Countywide Community Emissions Forecast by Jurisdiction**

| Jurisdiction               | 2005 Emissions<br>(metric tons) | 2020<br>Emissions<br>(metric tons) | % Increase<br>2005 to<br>2020 |
|----------------------------|---------------------------------|------------------------------------|-------------------------------|
| Yountville                 | 28,305                          | 31,924                             | 13%                           |
| Calistoga                  | 28,427                          | 31,480                             | 11%                           |
| St. Helena                 | 46,052                          | 49,541                             | 8%                            |
| American Canyon*           | 91,449                          | 152,393                            | 67%                           |
| City of Napa               | 455,062                         | 544,572                            | 20%                           |
| Unincorporated Napa County | 550,986                         | 656,989                            | 19%                           |
| <b>TOTAL</b>               | <b>1,200,281</b>                | <b>1,466,900</b>                   | <b>22%</b>                    |

\* The relatively high growth in GHG emissions for American Canyon is the result of ABAG projections that show high anticipated growth in the number of jobs and households between 2005 and 2020.

#### 2020 Napa Countywide Community Emissions Forecast by Sector

| Sector   | 2005<br>Emissions<br>(metric<br>tons) | 2020 Emissions<br>(metric tons) | % Increase<br>2005 to<br>2020 |
|--|---------------------------------------|---------------------------------|-------------------------------|
| Residential Buildings                          | 196,350                               | 219,924                         | 12%                           |
| Commercial & Industrial Buildings              | 226,661                               | 292,783                         | 29%                           |
| Transportation                                 | 636,724                               | 797,054                         | 25%                           |
| Lawn & Garden Equipment                        | 3,616                                 | 4,053                           | 12%                           |
| Construction & Industrial/Commercial Equipment | 49,675                                | 59,839                          | 20%                           |
| Agriculture/Farming                            | 33,046                                | 33,046                          | 0%                            |
| Solid Waste                                    | 54,209                                | 60,201                          | 11%                           |
| <b>TOTAL</b>                                   | <b>1,200,281</b>                      | <b>1,466,900</b>                | <b>22%</b>                    |

The full report contains the breakdown of these tables by jurisdiction.

## **Six Goals and 53 Actions for GHG Reductions**

To reach the 2020 reduction target, the cities and the County of Napa will need to reduce GHG emissions countywide by 30 percent by 2020.

To achieve that 2020 target, Napa County must aggressively pursue reduction measures in every sector. For example, the transportation sector produces the greatest amount of Napa County's GHG emissions—approximately 55 percent. Ideally, emissions reduction strategies would yield the greatest results in this area. However, transportation is the sector least amenable to reduction actions, as discussed below. Thus to the extent that reductions are proportionally less in transportation due to the lack of available measures, short term *high-impact* opportunities in the electricity and natural gas sector must be pursued to compensate for transportation's shortfall, despite the fact that only about 36 percent of GHG emissions in Napa County come from electricity/natural gas. In the long term, reductions from all sectors will have to approach 80 percent by 2050 to meet the scientific imperative.

This document details six goals with 53 high-priority countywide actions intended to achieve the emissions goals. Staff from all Napa cities/towns and County participated in the drafting of the 53 countywide numbered actions outlined below. In addition, when appropriate, each jurisdiction provided additional local specificity regarding the development or implementation of a countywide action.

The Climate Action Framework's actions fall into six major goals:

5. **Expand Transportation and Mobility Options:** Shift transportation from fossil fuel vehicles to transit, walking, bicycling, and renewably powered vehicles and invest in Napa County jobs.
6. **Improve Buildings and Energy Efficiencies:** Invest in widespread energy and water efficiency to reduce demand; invest in Napa County renewable energy sources.
7. **Reduce Consumption and Solid Waste:** Significantly reduce the amount of waste produced in cities and the County.
8. **Conserve Agriculture, Natural Resources, and Urban Forests:** Protect our natural resources and farmland, and sequester carbon.
9. **Increase Community Engagement:** Market programs and conduct community outreach to increase participation in GHG reduction efforts.
10. **Improve Local Government Operations:** Lead by example by implementing policies and programs in jurisdiction operations and facilities.

The actions described in this Framework are not intended to be an exhaustive list of actions that the cities and County of Napa will undertake to achieve the 2020 objectives; they may do much more. However, these actions identified are the highest priority countywide actions. The Climate Action Framework includes goals for 2020, objectives and the actions needed to achieve these objectives. When implemented, these actions will enable the County and cities to meet the established emissions target.

## Framework Development Process

In February 2009, the Napa County Transportation and Planning Agency (NCTPA), which includes staff and elected officials from all local jurisdictions, completed an initial countywide assessment of GHG emissions. This inventory was further refined in August 2009 and serves as the baseline for forecasting future emissions, as well as helping inform the actions identified in this Climate Action Framework.

City and County staff from all Napa County jurisdictions participated in a series of work sessions to develop a list of countywide actions to reduce GHG emissions with specific local actions identified whenever possible. This countywide list and other potential actions were subsequently evaluated using GHG reduction modeling software and expert analysis and studies. The result of this technical analysis is an estimate of expected GHG reductions and their associated costs.

The development of this Framework follows the “Five-Step Milestone Process” developed by ICLEI—Local Governments for Sustainability. This step-by-step process provides communities with a way to address a global problem at the local level—by adopting practices and policies to reduce GHG emissions, improve air quality, and enhance community livability and economic vitality.

- **Step 1—Baseline emissions inventory and forecast:** Current and forecast GHG emissions (if nothing is done) for transportation, electricity and natural gas, solid waste and agriculture in the County and cities of Napa.
- **Step 2—Emissions and reduction targets:** The specific reductions needed in each sector and jurisdiction to reach the 2020 goal.
- **Step 3—Local action plans:** The specific actions to be pursued in the local jurisdictions to reduce emissions (described in this Climate Action Framework and elaborated in future projects and program-specific plans).
- **Step 4—Implement policies and measures:** Cities and the County implement the Plan, while partners such as other local agencies, businesses, schools, non-profit organizations and individuals also embark on programs to reduce GHG emissions (major efforts are already underway).
- **Step 5—Monitor and verify results:** Ongoing monitoring will allow the Framework to evolve and be built on as new climate-related technology, policies, best practices and resources become available.

Each action in the Framework had to meet four criteria before being included: it must be under local control so that it can be implemented by local governments or businesses; it must lead to a significant reduction in GHG emissions (using the Napa County Carbon Model—see Appendix); it must be cost-effective over its life cycle in that it will pay for itself in energy cost savings; and it must be politically feasible.

**Based on this Framework, local governments and agencies will aim to:**

- Develop forward-looking policies;
- Make progressive land use decisions;
- Encourage walking and biking;
- Encourage renewable energy development and use;
- Effectively use codes and ordinances;
- Sustainably manage landfills and waste treatment plants;
- Conserve agriculture and open space;
- Operate more integrated efficient public transportation networks; and
- Implement eco-friendly, sustainable practices.

DRAFT