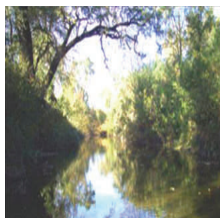


County of Napa Government Operations Greenhouse Gas Baseline Study

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and
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Executive Summary

The issue

There is a growing international consensus among scientists and policymakers that carbon dioxide and other greenhouse gases (GHG) are warming our planet at a rapid rate. If this trend continues, it could have severe impacts on human life and the environment. Thus, global warming and greenhouse gas issues have become a major concern for policymakers and citizens worldwide.

Legislation

California Governor Arnold Schwarzenegger has recently taken two actions that address GHG reduction issues in the State of California. The Governor signed Executive Order S-3-05 on June 1, 2005, establishing the first GHG reduction targets in California:

- Reduce GHG emissions to 2000 levels by 2010;
- Reduce GHG emissions to 1990 levels by 2020; and
- Reduce GHG emissions to 80% below 1990 levels by 2050.

On Sept. 27, 2006, the Governor signed into law the California Global Warming Solutions Act of 2006 (AB32). AB32 set into statute the Governors' 2020 goal of reducing GHG emissions to 1990 levels.

Napa County direction

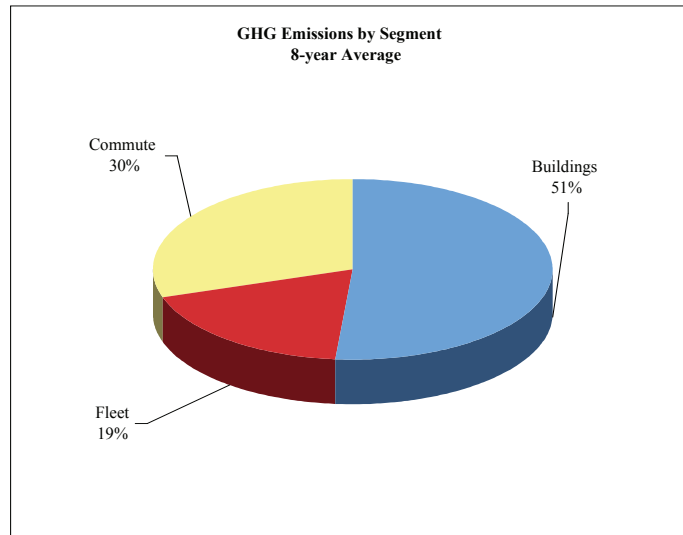
On May 1, 2007, Napa County's Board of Supervisors directed staff to complete a Greenhouse Gas Baseline Study that develops an empirical database of County Government Operations GHG emissions. This analysis:

- provides historical energy consumption data for County facilities/buildings, fleet, and commuter habits since calendar year 2000 through August 2007; and
- serves as the basis for the Board to adopt a baseline year from which to measure the County's GHG emission reduction targets and goals. Staff recommends not establishing a baseline at this time given the California Air Resources Board (CARB) has yet to provide guidance or protocols to local governments on how they are to implement AB32. CARB is scheduled to provide this guidance January 2009.

The Baseline Study addresses three major categories of emissions from County operations:

<u>Facilities:</u>	Electricity and natural Gas use for facility lighting, cooling, heating, fans, pumping, computers, and other facility operations;
<u>Fleet:</u>	The use of gasoline/diesel for heavy equipment and light vehicles; and
<u>Commute:</u>	The use of gasoline for traveling to and from work.

See Figure 4 on page 22 for more detail on the GHG contributions of electrical usage, natural gas consumption, fleet fuel consumption, employee commute and reimbursement to employees for use of personal cars.



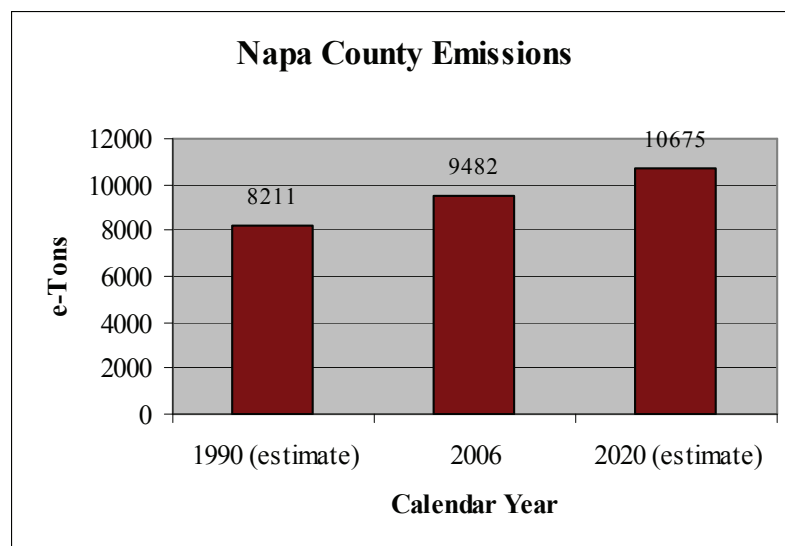
Napa County GHG data

Currently, there are no guidelines that specify how emissions should be estimated for 1990 in instances where reliable data is not available. However, CARB has completed a GHG emission inventory that indicates there has been an annual increase in GHG emissions of 0.053% from 1990 to 2000 for the State as a whole. We have used this trend analysis to estimate that the County produced **8,211 e-Tons in 1990**. e-Tons is the accepted unit of measurement for equivalent Carbon Dioxide (CO₂) which is defined by the Intergovernmental Panel on Climate Change as “the concentration of CO₂ that would cause the same amount of radiative forcing as a given mixture of CO₂ and other greenhouse gasses.”¹ We recommend that this value be used as a placeholder until further guidance is provided by CARB.

We have also developed an overall trend line analysis by comparing the estimate of County e-Tons produced in 1990 with that produced in 2006. In order to forecast the impact of future growth of County Government operations, an annual increase of 0.85% should be utilized from the year 2006 until the year 2020 for GHG planning purposes based upon this formula. This analysis also includes the benefit of efforts taken to date to reduce GHG emissions. However, even with efforts taken to date, this projection indicates the County without future efforts to reduce GHG will be producing **10,675 e-Tons in 2020**.

For total GHG emissions for each of the years analyzed, see Table 2 on Page 21.

1. State of California website: http://www.climatechange.ca.gov/glossary/letter_e.html



Compliance

As previously stated, the goal of AB32 is to reduce GHG emissions to 1990 levels by the year 2020 for the State as a whole. AB32 does not define specific targets for different segments of the economy.

Based upon CARB analysis of statewide CO₂ emissions for the year 2004, 60% were related to point sources and 40% for related to non-point sources. According to the CARB's most recent staff report, electric generators, cogeneration facilities, oil refineries and cement plants account for 94% of all of the point source CO₂ emissions in the State. The CARB is presently focusing its current efforts on these end-use industries. It is a possibility that the emission reduction requirements for smaller or rural government agencies will vary from the overall stated target for the State.

While the final rulemaking of CARB remain unknown, the data in Table 1 does provide a glimpse as to the order of magnitude for County Government operations to reach 1990 GHG levels. It is estimated that there will need to be a twenty-three percent (23%) GHG reduction to reach the preliminary estimate of 1990 levels from the levels projected for 2020.

Progress to date

Napa County has responded to the challenge of climate change in its own operations, with significant policy decisions including:

1. Requiring the design and construction of the Sheriff facility to be LEED (Leadership in Energy and Environmental Design) certifiable;
2. Initiating energy management projects at the Administration Building, Hall of Justice, 650 Imperial and other facilities;
3. Adopting Resolution 04-05 to support purchase of clean air vehicles for general services vehicles;
4. Joining the Energy Watch program, a joint effort between Pacific Gas & Electric (PG&E) and the Association of Bay Area Governments (ABAG) in July 2007;
5. Leadership of California State Association of Counties efforts regarding Climate Change policy by Napa County Supervisor Diane Dillon; and
6. Authorizing International Council for Local Environmental Initiatives (ICLEI) membership in December 2007.

County GHG emissions from 2005 to 2007 would have been higher had the County not taken these actions and others to reduce its carbon footprint. Upgrades and energy efficient changes have resulted in a combined annual emissions reductions of **518.9** e-Tons. For details, see Table 5 on page 26. These efforts have resulted in a 5.2 percent reduction in GHG emissions compared to what the emissions would have been without the upgrades and changes. See Figure 7 on page 27 for details.

Public Works continues to work with the Association of Bay Area Governments (ABAG) Energy Watch Program to identify additional energy management projects that can be implemented. The initial report and summary of findings has been completed, and staff is now working with technical specialists to analyze County energy consumption patterns in a much more detailed manner. Examples of current analyses include potential retro-commissioning of the HVAC systems in the Hall of Justice and Administration buildings, study of server virtualization and computer management systems, and further HVAC and lighting retrofits for other County buildings.

It is important to recognize that the development and implementation of a GHG reduction plan is a dynamic process. The science upon which our current understanding of GHG emissions and its effects is still relatively new and is being updated frequently.

Moving forward:

1) Continue to strive for good data

Accepting the empirical data outlined in this study is the first step in moving forward. It is also important to continue to collect data for calendar year 2007, and future years, so the County can monitor its success in reducing GHG. Developing the current empirical database has been time consuming, and the County needs an instrument to track and assess the energy use of facilities to make this a more effective process.

Through the International City/County Management Association (ICMA) and the National Association of Counties (NACO), Public Works staff has participated in telecommunication seminars with the United States Environmental Protection Agency (EPA) regarding its **Energy Star program**. This program provides a cost-free, online tool called Portfolio Manager to track and assess the energy use of facilities. The program also provides a comprehensive Energy Star Challenge Toolkit to help promote energy efficiency to the broader community. Joining Energy Star requires a commitment to promote the goal of the Energy Star program to improve energy efficiency by 10 percent or more.

Staff recommends not establishing a baseline year until CARB provides further guidance and protocols. CARB plans on addressing GHG emissions in the commercial and institutional segments as part of its work plan for 2008. Staff will monitor developments related to CARB's implementation of AB32, and will return to the Board with a baseline year recommendation once CARB provides guidance and protocols.

2) Participate in local, state and federal conversations and programs

Staff continues to work with the Local Government Energy Watch Program, a joint effort of the Association of Bay Area Governments (ABAG) and Pacific Gas and Electric (PG&E), to conduct energy audits that will identify activities that could help the County reach future carbon reduction goals. The County is also seeking additional support to identify renewable energy opportunities with the California Energy Commission. Staff also continues to coordinate efforts with the Napa County Transportation and Planning Agency (NCTPA), and the International Council for Local Environmental Initiatives (ICLEI), an international association of more than 700 local governments and national and regional local government organizations that have made a commitment to sustainable development. NCTPA was recently successful in receiving a one-year grant to fund a circuit rider who will assist member jurisdictions in developing baseline data and carbon reduction projects. Even though the County is already focused on the areas for which the grant for the "climate protection circuit rider" was written, we hope that the County can benefit from this position as appropriate.

3) Work with experts to begin to draft our plan of action

If so directed, staff will continue to develop a GHG reduction Climate Protection Plan for the Board's consideration. This plan will evaluate implementation costs, cost savings, and GHG reductions on a project-by-project basis. This Plan will focus on facility improvements, fleet operations and employee commute.

Kenwood Energy has nearly completed its current scope of work to develop baseline data. Given Kenwood Energy's knowledge of County operations and previous experience in the development of the County of Sonoma's Climate Action Protection Plan, it would be beneficial to keep Kenwood Energy as a member of the team as the County continues to focus on how it can reduce its carbon footprint.

Staff recommends that the Board take the following actions:

1. Accept GHG empirical data for calendar years 2000 through 2006, and direct staff to continue to develop this information for calendar year 2007 and future years;
2. Authorize staff to join the United States Environmental Protection Agency's Energy Star Program;
3. Direct staff to continue to develop a GHG reduction Climate Protection Plan;
4. Direct staff to return to the Board with an agreement to continue the services of Kenwood Energy to assist in the development of a GHG reduction Climate Protection Plan; and
5. Direct staff to return to the Board with a baseline year recommendation once the CARB provides guidance and protocols for local governments.