

THE CITY OF BURLINGTON, VERMONT

On Champlain with a Plan

PROJECT SNAPSHOT

PROJECT

Burlington, VT, Climate Action Plan

ESTIMATED CO₂ EMISSION

REDUCTIONS

156,000 tons a year by 2005

INVESTMENT

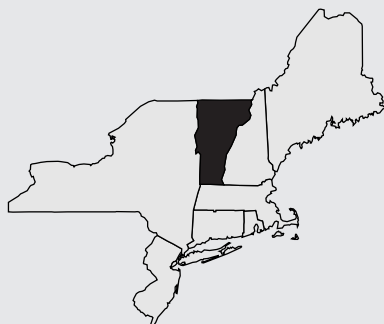
Approximately \$45,000

LESSONS LEARNED

- Few people are fully aware of global climate change, their contributions to the problem, and the broad threats it poses to the economy and the environment.
- Achieving the targeted CO₂ reductions will require regional collaboration.

FUNDING SOURCES

Burlington Electric Department's Energy Efficiency Program, Chittenden County Regional Planning Commission, Metropolitan Planning Organization, University of Vermont, Fletcher Allen Healthcare, Vermont Energy Investment Corporation



INTRODUCTION

The City of Burlington, VT, has adopted a Climate Action Plan designed to raise consciousness about global warming and stimulate action to address it. When fully implemented in five years, the plan could cut carbon emissions by ten percent from 1997 levels, making the city one of only a few to be well on the way to achieving the reduction goals of the Kyoto Protocol. In pursuing the complementary objectives of information and action, the plan's developers seek to contribute to Burlington's broader vision of becoming one of the most sustainable cities in the United States – a city where economic, environmental and social values can work together to promote the common good.

As in the rest of the United States, Burlington's chief greenhouse gas is carbon dioxide. Estimated 1990 CO₂ emissions were 509,000 tons, rising to 624,000 tons in 1997. With a predicted energy consumption growth rate of 1.7 percent a year under business-as-usual conditions, emissions in Burlington are projected to rise by 40 percent in five years, reaching 716,000 tons a year in 2005. Most of the current and projected growth in CO₂ emissions is in the transportation and industrial sectors.¹

THE PROJECT

Joining forces in the mid-1990's with local business leaders, other political representatives and surrounding communities, the Burlington City Council took steps to recognize the risks posed by global climate change. In 1996, the City Council voted to participate in the Cities for Climate Protection campaign, which was organized by the International Council for Local Environmental Initiatives (ICLEI), a nonprofit group that helps local communities respond to the threat of global warming. Two years later, the Council passed a second resolution setting as a greenhouse gas (GHG) reduction target for the year 2005 a ten percent decrease from 1990 levels. Burlington Mayor Peter Clavelle then formed the Climate Protection Task

Force, and charged it with developing an action plan with specific recommendations for achieving that goal.

After 18 months of planning and analysis, the Task Force released the Climate Action Plan. It was adopted by the City Council on May 1, 2000. The Plan identifies five strategic categories of action:

- Implementation of climate action plans for municipal buildings and operations.
- Support for full deployment of energy efficiency measures over the next five years.
- Development and leadership of a public education campaign.
- Support for biomass and other alternative energy sources.
- Support for climate-friendly transportation policies, including implementation of transportation demand management (TDM) projects.

The other major goal of the initiative is public education and communications. The Task Force developed a number of strategies here. Among those emphasized:

- Brochures for the general public and for more targeted audiences, with distribution taking advantage of existing networks, such as utility bills.
- Neighborhood meetings to discuss proposed or potential energy-saving technologies, such as a district energy system.
- School participation. (One idea was to adapt a sixth-grade curriculum on climate change and community action developed by the city of Chula Vista, CA).
- Programs and messages broadcast on the media, particularly public-access television and radio.
- A website.

■ Partnerships among community organizations in Burlington, including the faith-based community.

■ Presentations describing Burlington's program to communities in surrounding Chittenden County, including partnering with the regional planning commission to offer the program to other communities.

After careful review of its initial assessment, the Task Force recommended that the action plan be revised to reflect what it considered a more realistic carbon dioxide reduction target for 2005 – ten percent below 1997, rather than 1990, emission levels. This would eliminate 156,000 tons of CO₂ a year by 2005. The original goal called for a 257,000-ton cut.

In the words of Mayor Clavelle, adoption of the Climate Action Plan has been “a major step forward in achieving a vision of Burlington becoming one of America's cities. The challenge now is to move aggressively to implement the strategies contained in the plan.”

THE RESULTS

Demand-side energy efficiency programs² currently offered by the Burlington Electric Department (BED) have a track record of success – Burlington has been cited as a national model in this area. BED estimates that they avoid the release of 32,439 tons of CO₂ annually, while saving customers \$4.3 million dollars a year. Aggregate carbon dioxide reductions from the five strategies within the action plan stand to save an additional 156,000 tons or more by 2005. Those strategies are:

■ A revolving energy efficiency fund dedicated to improving the efficiency of municipal buildings and operations. This could save some 6,000 tons of CO₂ emissions a year.

■ Demand-side management programs sponsored by electricity, natural gas and low-income service providers. Estimated CO₂ reductions for all the programs would be 20,000 tons a year from 2000 to 2005.

■ The Ten Percent Climate Challenge Campaign, which is a public education effort designed to get the community involved and to keep it involved. The central idea is that individual actions can make a real difference, even when a problem is global in scale. With projected annual emissions reductions of 70,000 tons by 2005, this strategy holds the largest potential impact of all those recommended by the Task Force. (Analysis of projected savings was done by the Climate Protection Task Force and is based on previous successes with the City's energy efficiency programs.)

■ A community biomass district heating and cooling system. The task force is urging the city to continue its efforts to move forward with this concept. The system would burn sustainable organic matter and use existing pipes to provide steam and chilled air to downtown buildings. Emission reductions from such a system would be 35,000 tons in the first phase.

■ Transportation demand management (TDM) strategies and support for climate-friendly transportation policies at the regional, state and federal levels. Selected TDM measures (the expansion of park-and-ride lots, for instance) could provide 15,000 tons of annual CO₂ reductions by 2005. Additional cuts that could reach 10,000 or more tons a year by then might be obtained through state incentives like raising motor fuel taxes to reflect hidden transportation costs, and federal energy efficiency policies like increasing minimum vehicle efficiency standards.

The plan offers several important additional benefits as well. These include cleaner air, improved human health, increased economic vitality and a more livable community. In contrast to some other areas, motor vehicles are by far the single largest source of air pollution in Burlington and its environs (relatively little of Vermont's power is generated by burning fossil fuel). In addition to CO₂, cars emit significant quantities of carbon monoxide, nitrogen oxides and volatile organic compounds, including such car-

cinogenic toxins as butadiene, benzene and formaldehyde. Across the U.S., motor vehicle emissions cause an estimated 40,000 premature deaths every year.³

In addition, many of the strategies and measures recommended in the action plan make economic sense even if the benefits of climate protection are not considered. Electricity and fossil fuel imports can be reduced, and money kept in the local economy, by increasing energy efficiency in the buildings and the transportation sectors.

CITY PROFILE

Situated on Lake Champlain in northwestern Vermont, Burlington is the state's largest city. Its population is approximately 40,000. The city is a manufacturing, commercial and tourism center, and a port of entry into the U.S. Its major industries include electronic equipment, steel and wood items, maple syrup, business machinery and textiles. It also is home to the University of Vermont, Champlain College, Trinity College of Vermont, Burlington College and a junior college. Two major highways pass through South Burlington – U.S. 7 from the south and U.S. 2 from the east – carrying traffic into and out of the city. High traffic volume on these routes has led to major strip development over the past several decades.

LESSONS LEARNED

During the development of Burlington's action plan, the task force discovered three important things. First, few people are fully aware of global climate change and the threat it poses to the economy and environment. They also tend to be unaware of their own contribution to the problem. The city concluded that education should get top priority, even though it tends to be resource intensive. Second, Burlington has a history of environmental stewardship and already is moving forward with many of the suggestions in the plan. The task force is seeking to build on this momentum. Third, regional collaboration will be required to target needed

carbon reductions. Cars and trucks, among many other CO₂ sources, cross municipal lines. But even if the emitter in question is confined to Burlington, its pollutants and their economic impacts do not remain there. To get the most out of this effort, Burlington found that cooperation with neighboring towns would be essential.

FUTURE COMMITMENTS

The Task Force, now called the Alliance for Climate Action (ACA), has made a commitment to raise funds for and provide resources to implement the five strategies set forth in Burlington’s Climate Action Plan. The ACA plans to draw on outside as well as in-kind contributions to implement the plan over the next five years. The proposed first-year budget is \$144,000. ACA has identified two immediate priorities: the Ten Percent Challenge Campaign, and development of a monitoring and reporting program to track the City’s progress towards its CO₂ reduction goal. Overall, the Ten Percent Challenge offers the largest potential impact of all five of the action plan strategies. Its projected annual emissions reductions are 70,000 tons. Unlike the others, which rely on single sectors or single projects – for example, energy efficiency in government buildings, and a community renewable district heating system, the Campaign asks every citizen do something. When added together, these small initiatives contribute the most to the overall goal. As states and local communities become more active in promoting climate protection, the creation and operation of monitoring and reporting systems becomes critical. Unfortunately, these are tasks that often do not get the attention they

deserve. The state of Vermont has proposed working in partnership with others to design a model monitoring and reporting system to support local climate protection activities. The system will be developed and tested in Burlington, and may be modified to serve the needs of other communities.

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The Burlington Climate Action Plan may be downloaded from the web at:
www.burlingtonelectric.com/special/climate/climatemain.htm

¹ The baseline and projected emissions inventories have been developed by the Vermont Energy Investment Corporation (VEIC), based on initial estimates derived by greenhouse gas emissions software provided by the International Council For Local Environmental Initiatives (ICLEI).

² The programs are “demand side” because they save electricity at the point of use by reducing a customer’s need for (and demand for) power.

³ The Climate Action Plan, “A Plan to Save Energy and Reduce Greenhouse Gas Emissions,” Burlington Climate Protection Task Force, Burlington, VT, March 2000.

CLEAN AIR-COOL PLANET CASE STUDY RATING

This case study reduces CO₂ emissions equivalent to the following:

Avoiding the consumption of 782 barrels of oil per day. (1 barrel = 50 barrels of oil)



OR Taking 21,398 vehicles off the road per year. (1 car = 1,000 vehicles)



Assumptions: 1,093 lbs of CO₂ per barrel of oil. Vehicles are average passenger cars (approximately 20 lbs CO₂ per gallon of gasoline - 22.5 miles per gallon, averaging 16,000 miles per year)