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What One Municipality Has Accomplished:

The City of Saco and Its Energy Committee

by Travis Peaslee

Saving money and helping the environment are two goals the city of Saco has always set as a high priority. To help address America's oil dependency, rapid climate change, and rising energy cost, the city knew it had to take a stand and do its part in tackling these issues. In the fall of 2005, the city formed an energy committee to investigate means for conservation, energy efficiency, and renewable energy. The committee consists of a city councilor, a staff person from the Ferry Beach Ecology School, the maintenance director for the Saco schools, and city personnel, and it meets on a monthly basis to discuss and handle energy-related problems. The committee is non-appointed and has an open door policy to all interested parties who are sincere and passionate about making a difference.

Initially, with limited knowledge on the subject, the committee turned to the experts, who graciously attended various committee meetings. Speakers from organizations such as the Maine Office of Energy Independence, Department of Environmental Protection, and Efficiency Maine supplied the committee members with the knowledge and know-how to make a significant difference in Saco.

The committee initially spent a substantial amount of time and effort to research and evaluate ways to save energy. Wanting to ensure that technologies and methods were proven, the committee toured facilities

that had already established energy-efficient systems. The tours covered specific areas of interest that were being considered by the committee and included wind turbines in Hull, Massachusetts; geothermal heat systems at a middle school in Gorham and at the Maine Audubon Society in Falmouth; and a photovoltaic/wind turbine hybrid system at the Maple Hill Farm Bed and Breakfast located in Hallowell.

Along with seeing technology first hand, the committee had representatives from local businesses attend meetings to present their expertise in their respective fields. The committee gathered many good insights and derived many energy projects from these meetings. The committee believes that the most productive way to approach these projects is to listen to the experts, decide what projects can be implemented, and then to just do them.

Relying on the plethora of information that the committee members had gathered, the Saco City Council appropriated \$300,000 to invest in city-wide energy improvements. Addressing the least efficient items, or as the committee refers to them "low-hanging fruit," Saco implemented a proposal from Sebago Energy to replace city-wide departmental light bulbs with compact fluorescent lights (CFLs). This project alone is saving the city more than \$11,000 annually, with a four-year payback period. Another quick fix was the replacement of 16 of the city's 22 departmental refrigerators with more efficient ones, providing a total savings of \$2,200 annually with a three-year payback period. Several other small-scale projects made a huge difference:

- The replacement of all departmental computer cathode ray tubes (CRTs) with new flat screens, which consume 90 percent less energy.
- Purchasing an electric car along with a hybrid Toyota Prius for city personnel use.
- Programmable power strips for computer peripherals.
- Various improvements to replace inefficient structural designs of doors and windows.
- Upgrading the heating system at the city community center.

The city's largest energy consumer, its wastewater treatment plant, has also implemented the use of renewable energy technology. The facility has installed a 33-foot 1.8-kilowatt wind turbine to help supplement power at its administration building. Along with capturing wind, the facility is using the sun in a newly installed solar thermal heating system to completely heat a newly constructed building. A new process control building, still in its conceptual phase, is expected to extract the heat from the wastewater to completely heat and cool the building. The treatment plant staff has also been proactive at energy efficiency; they have undertaken projects such as installing natural-light solar tubes and solar-powered outdoor lighting, using variable frequency drive on all motors, and only purchasing premium efficiency pumps.

Though no city energy policies are developed from the committee's initiatives, it is becoming an unwritten rule that new city buildings will be as green and as efficient as possible. A great example of this is the new transportation center, which upon completion will be the centerpiece for the city's energy accomplishments. The facility will be a 6,200-square-foot building that will be heated and cooled from a closed looped geothermal system. The energy for the building will be supplied by a 100-foot 50-kilowatt wind turbine projected to produce at least 90,000 kilowatt hours annually, enough to completely power the facility. The transportation center energy projects are key milestones; they speak to the high effort, dedication, and devotion of the energy committee.

Prior to the approval of funding for the energy committee, several large-scale efficiency projects took place in Saco, thanks to federal grants and Efficiency Maine's incentive program. All traffic lights within the city were switched to LED (light-emitting diode) lights, which are much more efficient than traditional incandescent bulbs and require minimal maintenance. The Saco school department also replaced most of the lights in its schools with CFLs and implemented a building automation system that allows for controllable heating, cooling, and lighting to ensure maximum conservation. To date, the schools have reduced electrical consumption by nearly 20 percent. These projects have made a considerable difference in energy consumption and have served as the inspiration to do more.

U.S. Conference of Mayors Climate Protection Agreement

On February 16, 2005, the Kyoto Protocol, the international agreement to address climate disruption, became law for the 141 countries that have ratified it to date. On the same day, Seattle Mayor Greg Nickels launched the U.S. Conference of Mayors Climate Protection Agreement to advance the goals of the Kyoto Protocol through leadership and action by at least 141 American cities. By the June, 2005, U.S. Conference of Mayors Annual Meeting, 141 mayors had signed the Agreement. On November 21, 2008, the Conference of Mayors announced that more than 900 mayors have signed the Agreement to date.

Under the agreement, participating cities commit to take the following actions:

- Strive to meet or beat the Kyoto Protocol targets in their own communities, through actions ranging from anti-sprawl land-use policies to urban forest restoration projects to public information campaigns.
- Urge their state governments, and the federal government, to enact policies and programs to meet or beat the greenhouse gas emission reduction target suggested for the U.S. in the Kyoto Protocol, a seven percent reduction from 1990 levels by 2012.
- Urge the U.S. Congress to pass the bipartisan greenhouse gas reduction legislation, which would establish a national emissions-trading system.

Source: <http://www.usmayors.org/climateprotection/agreement.htm> and
<http://usmayors.org/climateprotection/documents/climateagreement112108.pdf>
[Accessed December 14, 2008]

The city of Saco, as well as the energy committee, has taken this matter seriously and is dedicated to continually addressing energy issues. Several members have attended courses to better understand the subject matter and to educate as many as possible. The city Web site has posted articles to inform Saco citizens of the committee's actions and accomplishments to promote energy efficiency. Along with the substantial steps toward complete energy efficiency, the city has teamed up with the Ferry Beach Ecology School to create public awareness through Earth Day activities. The city has joined the Governor's Carbon Challenge,

signed the U.S. Conference of Mayors Climate Protection Agreement (see sidebar, page 147), and was recently named the “Greenest City” in Maine by *Going Green Magazine*.

Saco is part of a statewide grass-roots effort to address these very serious issues, and it is currently working with the Maine Chapter of the Sierra Club, the Maine Council of Churches, and energy committees in SAD 71, Biddeford, Eliot, York, Bath, and Falmouth. The next steps for the energy committee include the following:

- To explore using micro hydro turbines at the wastewater treatment plant.
- To expand the city’s wind turbine program.
- To use biodiesel in municipal diesel-fueled vehicles.
- To consider the use of geothermal heating systems on more city-owned buildings.
- To investigate feasibility of using LED outdoor lighting on street lights.
- To continue with projects to reduce the use of energy. 🐟



Travis Peaslee is an employee of the city of Saco, Maine. He has worked as a lab technician for the Saco water treatment plant for more than four years and has been a member of the city’s energy committee for three years. As a member of the energy committee, he has been active promoting energy efficiency and conservation as well as helping to implement numerous city-wide projects.