

Progress Report

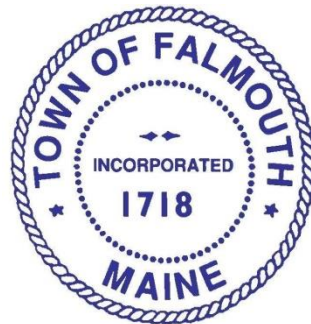
Of the 2009 Green Ribbon Commission Report

By the Recycling and Energy Advisory Committee (REAC)



Submitted to the Falmouth Town Council

April 13th, 2015



Background

In May 2007, prompted by the efforts of a citizens' action group, Cool Falmouth, and the efforts of Falmouth High School students, the Falmouth Town Council joined other local governments in signing the U.S. Mayors' Climate Protection Agreement. This agreement challenged communities to reduce their global warming emissions (CO₂e) 7% below 1990 levels by 2012. The Town Council authorized the ad hoc Falmouth Green Ribbon Commission on Energy and Climate Protection to complete an emissions inventory and make climate protection recommendations for action.

A Falmouth wide emissions inventory was completed in 2008 using 2007 data. The original inventory separated municipal emissions from residential/commercial emissions. Based on the conclusions made in 2007, the 2012 inventory includes only the municipality/school department emissions, because the Town can only manage what we can measure accurately. Community and commercial data calculations in 2007 were based on modeling rather than analysis from real time data. From this information, twenty-seven (27) recommendations were represented in the GRC Report and accepted by Town Council in 2010. These recommendations fall into the following categories: Energy Efficiency, Renewable Energy and Fuel Switching, Transportation and Land Use, and Waste and Recycling.

Of the 27 recommendations in the original Green Ribbon Commission Report (GRC), many have been adopted or are in progress in Falmouth. The Report's ideas and intentions strongly influenced the recently updated, Falmouth Comprehensive Plan, adopted in December of 2014. The recommendations being pursued by Falmouth and REAC are listed below. The list of those not being pursued follows in the matrix at the end of this report.

What follows is an update regarding emissions five years later and a report on the status of the recommendations as of 2015.

Municipal Emissions Inventory – 2007/2012

Falmouth's part-time Energy and Sustainability Coordinator has been monitoring the municipal buildings' energy use since 2012 and she has made a comparison of 2007 and 2012 data.

Approximately 5,129 metric tons of CO₂e were emitted from the town's municipal sector (including the schools) in 2012. In 2007, the municipality emitted approximately 4,813 metrics tons of CO₂e, (including the schools). Between 2007 and 2012, an increase of approximately 316 metric tons of CO₂e was emitted, or a **6.5% increase** compared to the 2007 data. There has been an increase in municipal building emissions over the five year period, reflecting that we are not meeting our 2% reduction goal. There are some qualifying facts.

There have been significant changes in municipal facilities since 2007, changes in building use and changes in square footage. Since 2007, the municipality's building footprint has increased by 102,310 square feet—representing a 23.6% increase over that time. The Police Department moved into a new LEED certified building, and the Food Pantry took over their old space at Town Hall. The Lunt and Plummer School were both sold. The new LEED certified Elementary School opened in 2011. Town Hall opened for four days a week instead of five in 2007. The Bucknam Road Fire Station moved toward a 24/7 schedule with personnel occupying that space nearly all hours of the day. There were fuel switches from oil to propane, from oil to wood chips, and solar panels were installed on the High School (they provide 1/3 of the school's electrical needs). These details give an idea of how much change occurred in the five years after the first inventory. The fact remains, however, that our municipal emissions increased. While we built better buildings and switched to cleaner fossil fuels and added renewables, our emissions went up in this sector.

Conversely, the Wastewater Department did a large facilities upgrade just about the time of the 2007 inventory and due to an offline electrical meter, the 2007 kWh reported may be artificially low. According to Wright-Pierce (wright-pierce.com), "the upgraded facility has increased treatment efficiency by almost 40% and is poised to meet future nutrient discharge standards, while at the same time reducing its 'carbon footprint' by cutting energy use by over 40%".

Separate from buildings' fuel usages, there are major emissions generated from the municipal transportation sector. In 2012, the municipal vehicle fleet (including the schools) used 31,395 gallons of gasoline and 66,199 gallons of diesel; for a total of **948 metric tons of CO₂e**. These figures are not included in the total municipal buildings' carbon footprint. However, they represent a significant portion of the overall carbon footprint and should be managed to reduce overall consumption of fuel use.

Municipal Emissions Inventory— 2013 and 2014

Total emissions in 2013 were 4,988 metric tons of CO₂e as compared to 5,129 metric tons of CO₂e in 2012. The slight 141 metric tons of CO₂e decrease between 2012 and 2013 could be partly attributed to the final sale of the Plummer building, which used approximately 10,275 gallons of oil each year, equating to approximately 123 metric tons of CO₂e for that one building that the municipality is no longer responsible for heating.

In 2013, the municipal vehicle fleet (including the schools) used 33,498 gallons of gasoline, and 70,198 gallons of diesel; for a total of 1,012 metric tons of CO₂e were emitted in addition to emissions generated from building's energy use stated above.

The 2014 municipal energy uses are being collected and will be assessed and analyzed during the first half of the 2015/2016 fiscal year and will be reported upon completion.

*See Figures 1-3 at the end of this report for visual representations of electricity (kWh) and fuel use (gallons) based on department, as well as an emissions graph for years 2007, 2012 and 2013.

Green Ribbon Commission Recommendations—Status Updates

Energy Efficiency

- *Create a full-time Energy and Sustainability Coordination Position-* It has been determined that a full-time position is required to carry out the Town's commitment of reducing emissions, along with implementing recommendations from the GRC Report, and potentially to assist in the implementation of recommendations from the recently adopted Comprehensive Plan. A full-time position has been proposed in the current budget, partially funded from TIF funds, to work with the municipality/schools, residents, and Falmouth businesses on ways to reduce energy and waste.
- *Energy-efficient home construction policy.* - REAC to create handout for distribution by Town and Codes office. This handout will include information on construction, heating, cooling and landscaping aimed at reducing/limiting the project's energy use and CO₂ output.
- *Install Cold Climate Heat Pump in a municipal facility.* - Energy efficiency upgrades to the Motz building included the installation of units in the Parks and Community Program Department offices. Sustainability Coordinator will monitor its efficiency. REAC is looking for a residential demonstration project for an outreach and education program.
- *Ordinance requiring all municipal buildings be built to LEED standards or greater.* - REAC creating a Municipal Building Policy which will require energy efficiency and environmental considerations and cost-benefit analyses to be completed prior to upgrades and construction projects, including lighting. *All new street lighting along Route 1 is energy efficient and qualified for Efficiency Maine rebates.

Renewable Energy and Fuel Switching

- *Group or regional energy initiatives.* - Town Manager working with surrounding towns on installation of natural gas pipeline. Sustainability Coordinator is involved with research on Falmouth's roof top, ground mount and community wide solar potential. REAC will continue to monitor the State's energy plan as it affects Falmouth, including off shore wind turbines.
- *Adopt an ordinance to allow wind power installations.* - REAC interested in pursuing; will review other municipality's ordinances for guidance and engage interested Falmouth citizens in drafting a proposal.

- *Monitor results of School Department renewable energy installations.* - Municipal utility use/costs are being tracked by Sustainability Coordinator for use in cost-benefit analysis of future renewable installations and grant opportunities.

Transportation and Land Use

- *The Comprehensive Plan should address the connection between land use, transportation, energy and climate change.* - The Comprehensive Plan, adopted in 2013, incorporated several objectives recommended in the Green Ribbon Plan such as implementation of Smart Growth policies, infrastructure plans which connect the town's streets and sidewalks, and promotes preservation of open space.
- *Falmouth Trails Committee should view path use as form of transportation.* - Trails Committee working to install extensive network of trails with goal of town-wide connection. REAC will promote trail use as part of energy saving education and outreach programs.
- *Formalize the current town policy of using energy efficient low-emission vehicles.*—In late March of 2015, Falmouth began leasing an all-electric Nissan LEAF, with an option to buy. A Level II charging station has been installed at Town Hall, at no-cost to Falmouth—curtesy of a fund awarded to the Greater Portland Council of Governments from the Iberdrola Foundation. REAC is interested in formalizing the current policy for municipal vehicles to encourage the purchase of low or no-emission vehicles to be added to the fleet.

Waste Reduction and Recycling

- *Adopt an ordinance requiring all employers with more than fifteen employees, and/or buildings larger than 20,000 square feet, to put in place a recycling program.* - The Sustainability Coordinator will be working with Falmouth businesses on efforts such as these; efforts may include a “Reduce-Reuse-Recycle” education campaign.
- *Adopt an ordinance that requires all outside trash containers in public places (whether on private or public property) be accompanied by a recycling container of equal or greater size. This should include Town Landing.* - These efforts may include a “Reduce-Reuse-Recycle” education campaign. Parks should have signage announcing the policy of “carry-in-carry-out.”
- *Research policies to reduce litter in Falmouth-* Includes the ban of single-use plastic shopping bags; as well as to monitor the progress of Portland's ban on Styrofoam for future implementation consideration.

Summary Table of Recommendations

Topic	Recommendation	Being Pursued by REAC?	Department/ Authority	Status
	<i>Create full-time Energy/Sustainability Coordinator Position</i>	Yes	Town Manager	Full-time position proposed in 2015/2016 budget
Energy Efficiency	<i>Home Energy Rating System (HERS) Index</i>	No	Real Estate Industry	Not being pursued in Maine
	<i>Energy-efficient home construction policy</i>	Yes	Codes and Sustainability Coordinator	REAC to create handout for distribution by Codes Dept. Including green/efficient construction, heating and water use.
	<i>Building energy audits should be required by all homeowners prior to receiving their Certificate of Occupancy (CO)—Increase fee \$300</i>	No	Codes/Planning	Mandatory audits not supported at this time.
	<i>Install a Cold Climate Heat Pump System in a municipal facility</i>	Yes	Parks & Recreation	Installed at Motz Recreation Center 2015. REAC will monitor system efficiency. Looking for residential install for outreach & education.
	<i>Adopt a “Cool and Vegetated Roof” ordinance</i>	No	Codes/Planning	Mandatory ordinance not supported at this time.
	<i>Adopt an ordinance that requires all new municipal buildings, including schools, be built to meet the highest feasible LEED standard and/or meet the “2030 Challenge” energy performance standards.</i>	Yes	Codes/Planning	Mandatory ordinance not supported, REAC creating municipal building policy.
	<i>Adopt an ordinance with respect to codes for water heaters in new construction.</i>	Yes	Codes/Planning	Building handout will advise. Code department reports that approximately 90% of new construction utilizing

				efficient heaters.
	<i>Invest in LED lighting conversion when the operating cost savings can pay for the capital investment, using a reasonable depreciation schedule.</i>	Yes	REAC/Sustainability Coordinator	REAC will pursue creation of municipal building construction/upgrade efficiency policy.
	<i>Adopt an ordinance which requires that new parking lot lights use the most efficient lighting</i>	Yes	Codes/Planning	Mandatory ordinance not supported - efficient lighting addressed in Comp Plan.
Renewable Energy and Fuel Switching	<i>Group or regional energy initiatives—natural gas, wind, solar, etc.</i>	Yes	Town Manager/Sustainability Coordinator	Working with surrounding towns on installation of natural gas pipeline. Kimberly researching potential for Municipal and Community Solar.
	<i>Adopt an ordinance to allow reasonably sited, land based wind power installations.</i>	Yes	Codes, Planning Department, REAC	REAC interested in pursuing. Citizen interested evident.
	<i>Monitor the State's plan for off shore wind turbines. Be prepared to work with other coastal communities to push for local access to off shore generated electricity.</i>	Yes	Town Manager/Sustainability Coordinator	REAC monitoring issue for potential future involvement.
	<i>Monitor the results from the high school and elementary school installations, with an eye to exploring these kinds of power facilities at other municipal buildings.</i>	Yes	Sustainability Coordinator	Utility use and costs being tracked by Topper West and Kimberly Darling for use in future installation grant funding and cost effectiveness analysis.
Transportation and Land Use	<i>The Comprehensive Plan should address the connection between land use and transportation and energy and climate change. Introduce the concept "eco density" to the community. Embed "smart</i>	Yes	Planning & Community Development Departments	Recently completed comprehensive plan addressing smart growth goals of Falmouth.

	<i>growth” policies and recommendations in the Comprehensive Plan.</i>			
	<i>The Town should put in place the infrastructure that provides for transportation for all modes of transit; it should adopt a “Complete Streets” Policy.</i>	Yes	Planning & Community Development Departments	Recently completed comprehensive plan addressing smart growth goals of Falmouth.
	<i>Falmouth Trails Committee should look at the trails as a form of transportation and strive to put together a master trail plan which allows people to get to destinations using the trail network.</i>	Yes	Trails Committee, Bob Shafto, Open Space Ombudsman	Extensive trail network being installed in Falmouth with goal of town-wide interconnectedness.
	<i>The Town should encourage a train stop in Falmouth for the line that runs to Freeport/ Brunswick.</i>	No	Community Development and Planning Departments	Not currently being pursued.
	<i>Prohibit vehicles from parking or passing in/on shoulders which are designated bike lanes.</i>	Yes	Planning Department	Bike-Ped Plan being created for Falmouth. REAC monitoring issue for potential future involvement in alternative transportation education campaign.
	<i>School parking areas should give preference for car pools</i>	No	School Department	No status at this time.
	<i>Change land use ordinances to set maximum, not minimum, parking requirements. Plan for bus stops and shelters when designing roads and intersection. Create signs and make High Efficient Vehicle and carpooling parking spots in parking lots.</i>	No	Planning Department, REAC	REAC monitoring issue for potential future involvement in alternative transportation education campaign.
	<i>Adopt a “no-idling” ordinance or policy, complete with associated signs for public education.</i>	No	Planning Department, REAC	Mandatory ordinance not supported at this time. Potential for future REAC involvement in “no-idling” education campaign.

	<i>Adopt a policy that all intersections should be considered for roundabout prior to consideration of installing a stop sign or traffic signal.</i>	Yes	Planning Department	Being addressed via Comprehensive Plan, REAC will monitor.
	<i>Formalize the current town policy of using energy efficient low-emission vehicles.</i>	Yes	Sustainability Coordinator, REAC	REAC to pursue creation of municipal vehicle purchase policy. Currently leasing an all-electric 2015 Nissan LEAF—charging station at Town Hall installed at no-cost to Falmouth.
Waste and Recycling	<i>Adopt an ordinance requiring all employers with more than fifteen employees, and/or buildings larger than 20,000 square feet, to put in place a recycling program.</i>	Yes	Planning and Codes Departments. REAC	Mandatory ordinance not support. Kimberly doing outreach to Falmouth businesses on recycling. Potential for future REAC involvement in “Reduce-Reuse-Recycle” education campaign.
	<i>Adopt an ordinance that requires all outside trash containers in public places (whether on private or public property) be accompanied by a recycling container of equal or greater size. This should include Town Landing.</i>	Yes	Community Development	Mandatory ordinance not supported at this time. Potential for future REAC involvement in “Reduce-Reuse-Recycle” education campaign.
	<i>Ban the use and sale of plastic shopping bags</i>	Yes	Sustainability Coordinator, REAC, Ordinance Committee	Ordinance under review by Committee.
	<i>Ban the use and sale of styrofoam</i>	No	REAC will monitor the progress of Portland’s ban on styrofoam for future implementation consideration.	Mandatory ordinance not supported at this time.

Figure 1—Electricity use (kWh) based on department—2013

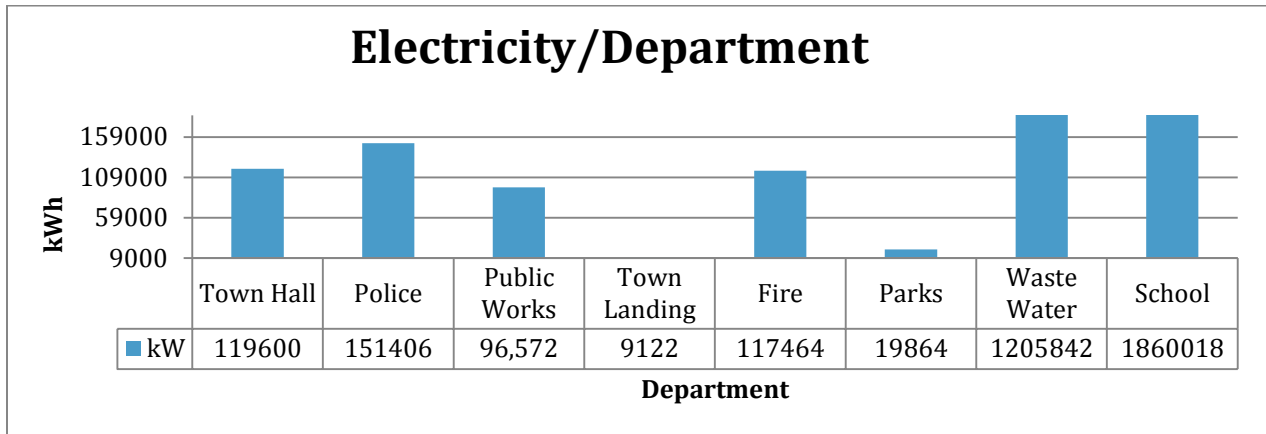


Figure 2—Fuel use (gallons) based on department—2013

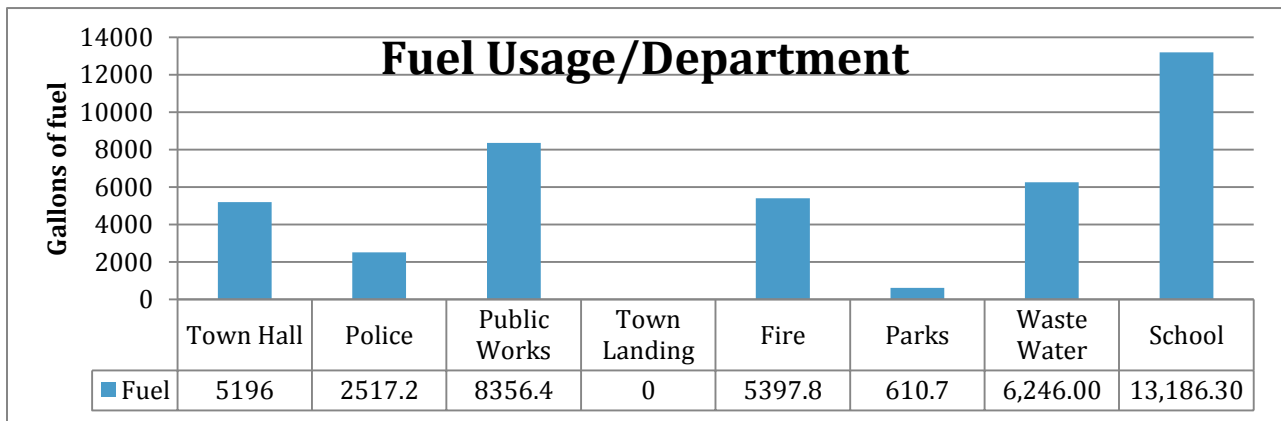


Figure 3—CO₂ Equivalents (metric tons) representing years 2007, 2012, 2013 *School does not include the Superintendent's office—or the additional 2,497 tons of woodchips used

