



Municipal Climate Action Plan Status Update

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Authors

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INTRODUCTION

BACKGROUND

This is a joint report by the City's Sustainability Office and Energy & Recycling Committee to update South Portland's City Council and residents on the status of the Municipal Climate Action Plan.

In 2014, the South Portland City Council formally adopted the Municipal Climate Action Plan (MCAP). This plan was the culmination of an eight year long process that began in 2007 when the City signed the U.S. Mayors' Climate Protection Agreement. The agreement called on signatories to implement policies and programs that would help them meet the specific goal of reducing greenhouse gas (GHG) emissions 17% by 2017. The City followed up on this in 2008 by establishing the Energy and Recycling Committee (ERC), a standing committee of citizen volunteers appointed by City Council to define how the City would achieve that goal.

In 2010, the City adopted a Sustainability Resolve that called for the implementation of resource conservation measures across all City departments, thus setting the stage for a detailed, data driven Municipal Climate Action Plan. By 2011, the City had compiled a comprehensive GHG emissions inventory (based on 2007 data) establishing a baseline against which future emissions reductions could be measured. Using this inventory, the ERC and City staff identified 25 action items, focused on reducing emissions from municipal operations.

These documents have served as a lens through which the City has focused on-going efforts to reduce GHG emissions and create a more sustainable community that benefits the lives of all citizens through energy savings, preservation of the environment, economic opportunity, and improvement of the health and welfare of the employees and people of the City. They also form a solid foundation upon which the City continues to build its climate action planning efforts.

MCAP STATUS UPDATE OVERVIEW

The primary purpose of this update is to report on the status of the 25 action items included in the MCAP. The status update for each action item will include a summary of efforts made by the City to implement each action item in the two years since the MCAP was adopted with the status of each item defined as either **Completed**, **On-Going** or **Not Started**.

The idea of sustainability involves a culture or behavior change which requires on-going engagement and education/outreach. In some cases, we were able to complete concrete actions such as reports and data collection, which will be used for continued tracking and to inform education and on-going sustainability initiatives. In most cases, we have made progress on actions that require on-going attention and initiative. On-going means the action item has been implemented, and the nature of the action may require future or continued action, evolving over time. Not Started means that the City has either not yet acted on this item or it has decided against implementing the action.

South Portland has made substantial progress in carrying out the 25 action items identified in the MCAP with 5 Completed, 18 On-Going and only 2 Not Started. This report goes hand in hand with a recently updated Municipal GHG Emissions Inventory, which compares 2014 municipal GHG emissions to our 2007 GHG emissions baseline inventory. Together, these two documents assess the City's progress in reaching its climate action goal, by implementing action items identified to reduce our municipal emissions.

Through the implementation of the MCAP action items, the City has made strides to reduce its energy usage, use cleaner energy more efficiently, and transition to renewable energy. These actions have helped the City achieve its goal of reducing municipal GHG emissions 17%. The 2014 inventory shows that between 2007 and 2014, South Portland reduced overall municipal energy use by 3%, associated emissions by 23%, and energy costs by 13%.

The significant progress that this Municipal Climate Action Plan Status Update represents is the result of a City-wide collaborative effort to implement the actions identified in the Municipal Climate Action Plan (MCAP) and meet demanding climate action and sustainability goals. The unflagging effort and leadership of the City Manager, the Sustainability Coordinator, the City Sustainability Committee, the Energy and Recycling Committee and members of all City departments has made the advancement of these goals a reality.

ACTION ITEM STATUS

Category 1: General Recommendations for Municipal Energy Consumption Reduction

Action #1: Change data tracking so that energy usage can be tracked for all municipal infrastructure, including schools.

Status: **Completed**

The Sustainability Office created and maintains a comprehensive municipal energy database.

Summary

The process of compiling data for the 2007 GHG emissions inventory highlighted the need to put in place more rigorous data collection systems and in the spring of 2011, the City began exploring methods to track energy use for municipal buildings. The Finance department began pulling out and recording electricity usage and costs for all buildings from billing statements and City departments began independently tracking energy use in more detail. For example, some departments began tracking their energy usage in detailed spreadsheets, and the Planning Department started using EnergyStar Portfolio Manager. By 2014, the South Portland School Department had started to use EPA Portfolio Manager to track energy usage in school buildings, but abandoned it in favor of a simple Excel spreadsheet which it now uses to track school building energy and water use data.

The Public Works Department tracks fuel use data for each individual municipal vehicle. Since 2000, PetroVend equipment has been installed on fuel pumps at the Public Works facility to gather data on the following: type of fuel, amount of fuel, employee accessing the fuel, vehicle receiving the fuel, City department responsible for fuel use and, if entered manually at the pump, mileage per hour. Phoenix software is then used to compile the data. This system will be updated and in place by 2017 when the new Municipal Services Facility is complete.

The Sustainability Office has created a comprehensive municipal energy database which includes energy consumption and costs for all municipal buildings, pump stations, and electrical accounts such as outlets, traffic and streetlights. This database will be updated annually. Access to accurate and up to date energy use and emissions data will help simplify and streamline future climate action planning efforts and implementation of energy and sustainability policies. This database will also be used to guide energy audits and projects and for benchmarking municipal buildings using the EPA's Portfolio Manager Software.

Action #2: Compile and complete the FY 2012 Emissions Inventory when the required data becomes available (there is a current lag in data availability), and prepare reports to determine the City's movement toward the goal of this plan.

Status: Completed

The Municipal Greenhouse Gas (GHG) Emissions Inventory was updated in 2016 (using 2014 data).

Summary

Because more recent data was available, the Sustainability Office used calendar year 2014 instead of 2012 to measure its progress in reducing GHG emissions. The Sustainability coordinator hired and worked with Ben Lake from The Greater Portland Council of Governments (GPCOG) to assist with updating the City's GHG Emissions Inventory. To maintain as much consistency as possible with the original GHG Emissions Inventory, the City used ICLEI's updated ClearPath online software platform to complete its 2014 municipal GHG emissions inventory. ***The complete 2014 GHG Emissions Inventory is attached as an appendix to this update.***

Action #3: Management of energy usage, costs, and managing technical energy systems is a specialized field, which should be addressed through the creation of new City positions focused on facilities management and sustainability.

Status: Completed

The City hired its first full time Sustainability Coordinator in March 2015.

Summary

In March 2015, South Portland created a new Sustainability Office and hired its first full time Sustainability Coordinator to implement the City's Climate Action Plan and related initiatives to help municipal departments, schools, and the community become more sustainable.

The mission of South Portland's Sustainability Office is to guide the development of policies and practices that simultaneously promote economic well-being, strong community connections, and a healthy environment. As a staff of one, the Sustainability Coordinator works closely with staff across all City departments, an internal sustainability team, and the City's Energy and Recycling Committee to implement MCAP action items and promote practices and policies to make municipal buildings and operations more energy efficient and sustainable.

Because energy use in buildings is the largest source of GHG emissions and represents a significant cost to the City, one of the core priorities of the Sustainability Office is facilities management. The Sustainability Coordinator is working with the Buildings Maintenance Supervisor and other City staff to implement energy efficiency and renewable energy projects and develop an energy management strategy.

The City is also consolidating municipal vehicle fleet and equipment operations, maintenance and refueling at the new Municipal Services Facility. Consolidation will achieve efficiencies and, presumably, cost savings for the City. The Municipal Services Facility was approved by voters in November 2013 and will be completed by June 2017.

Action #4: Continue to monitor and revise the City/School procurement policies to build in specific language ensuring all purchases of equipment, vehicles, and building upgrades meet the highest energy standards possible at the time.

Status: On-Going

General purchasing standards are in place.

Summary

In 2012, the City updated its Purchasing Ordinance to include Sec. 2-160: Environmentally Preferable Products and Services.¹ This should be considered as a first step in broadly guiding purchasing decisions.

The City continues to make green purchasing decisions on a case by case basis for systems, appliances and supplies with this broad guideline in mind. So far the City has purchased office paper

¹ SECTION 2-160: The City supports the purchase of environmentally preferable products and services as evidenced by its commitment to sustainability set forth in City Council Resolve #1-10/11. Where practicable, City departments should endeavor to ensure that specifications do not discriminate against environmentally preferable products and services; evaluate environmentally preferable products and services to determine the extent to which they may be used by the department; and review and revise specifications to include environmentally preferable products and services. (Ord. No. 22-89/90, 6-4-90, Ord. 15-98/99, 4/21/99, [Fiscal note less than \$1000]; Ord. No. 7-11/12, 1/4/12 [Fiscal Note: Less than \$1000])

with recycled content, purchased and installed more efficient building HVAC systems (see Actions #5 & #10), leased Nissan Leafs for the municipal vehicle fleet (see Action #14), upgraded some department refrigerators to EnergyStar models (see Action #8) and replaced window AC units with more efficient air source heat pumps (see Action #9). Also, the City IT Department has successfully implemented its own sustainability goals including a policy of purchasing only EnergyStar rated equipment. (Also see Action #20).

Zero waste events guidelines encourage the purchase of compostable, recyclable or reusable serveware items for city-sponsored events.

A subsequent step may be the adoption of an Environmentally Preferable Purchasing Policy that defines more specific standards and guidelines for purchasing and procurement within categories such as those defined by the EPA: Cafeteria, Construction, Custodial, Electronics, Grounds/landscaping, Office, Operations/Fleet/Shipping/Shop as well as energy and vehicle fuel efficiency standards.

Action Item #5: The City and its schools should strive to document all the energy reduction projects or initiatives that have been completed after 2007 above and beyond those resulting from the respective Siemens contracts. Many of the initiatives completed to date have been included in this document, but others have not yet been tracked and summarized. A City sustainability coordinator or facilities manager would be useful in this capacity.

Status: On-Going

The City is developing an energy management plan.

Summary

In addition to the Siemens Contract upgrades (see Action #10), other major energy reduction projects have included HVAC system upgrades at the Branch Library and Redbank Community Center and new waste oil burners at the Fire and Police Garages. City staff are developing an energy management plan for municipal buildings that will include an equipment inventory and list of energy projects (see Action #13). Information about past projects that have not been documented can be difficult to track down as there is some loss of institutional knowledge with staff turn-over. The energy management plan combined with building energy data tracking (see Action #1) will allow the City to document energy reduction projects and initiatives and demonstrate how those projects and initiatives impact energy use and emissions over time.

When the 2014 MCAP was written, the City was investigating the costs and benefits of membership in the ULI (Urban Land Institute) Greenprint program, which is an online platform for “data collection, analysis, benchmarking and reporting” of the environmental performance of buildings.² This cost benefit analysis revealed that the program was not a good fit for the City’s purposes. Instead, the City is moving forward to benchmark its energy consumption using EPA’s EnergyStar Portfolio Manager.

² <http://uli.org/research/centers-initiatives/greenprint-center/greenprint-environmental-management-platform/>

Action #6: Encourage department or building initiatives initiated by staff, such as participation in the State-wide program “Zero Waste” at the Memorial School. Ensure all City buildings and schools have adequate recycling containers and storage to support increased recycling efforts.

Status: On-Going

Recycling bins have been added and standardized.

Summary

Waste reduction opportunities have been expanded and clarified around the City. Every municipal building has standardized royal blue recycling bins that are clearly labeled with information about what can be recycled. The City is also adding recycling bins at outdoor public recreation areas, starting with a pilot project at Willard Beach that began in 2015.

As part of the “zero waste” effort, the Sustainability Office created a process for all City events to have recycling and compost, and created a [Guide for Zero Waste Event Planning](#) that can be used for both City and community events (see Action #21). The Community Center received all new “waste stations” that are color coded, clearly signed, and include a bin for organics to be composted in all public areas.

All City schools now have organics composting programs in their cafeterias and City-sponsored after school programs at both City Community Centers have organics composting. As a result of the organics composting program at the Dora L. Small Elementary School, for example, the weight of cafeteria waste has gone from approximately 170 pounds of waste each day down to approximately 10 pounds of waste each day. The waste that is diverted to composting consists mostly of food waste and other materials that can decompose under the right conditions into useable soil. Building on this, the Sustainability Office has implemented an annual waste reduction workshop for all second graders in collaboration with ecomaine.

Action #7: Continue advocacy for energy efficient policies at the Maine State Legislature level.

Status: On-Going

Summary

South Portland City staff have actively participated in and provided comments on legislation at the State level to support energy efficiency and renewable energy. In 2013, City staff was successful in drafting and advocating for LD 1251, a bill which would require electricity utilities to provide three options for municipal street light programs.³ These different ownership or lease structures will allow

³ http://www.mainelegislature.org/legis/bills/bills_126th/billtexts/HP088501.asp

Maine municipalities to choose the most cost-effective and energy-efficient option thereby reducing municipalities' total costs for street lighting by as much as 30% to 40% through efficiency upgrades.⁴

Over the past two years staff have participated in several state-level policy efforts by providing comments and testimony on proposed legislation regarding solar energy and net metering. In 2015, Rep. Sarah Gideon of Freeport introduced legislation to overhaul the state's net metering program for distributed energy such as solar. While it was not adopted, the legislature directed the Public Utilities Commission to facilitate a stakeholder process to develop options for expanding key solar market segments like municipal and community-scale solar in Maine. This resulted in a series of task force meetings convened to develop consensus around an alternative to the net energy billing policy. The task force findings were reported to the legislature in January of 2016 and formed the underpinnings of a subsequent legislative proposal (LD 1649), which was approved by the legislature in April 2016, but vetoed by Governor LePage. After being just shy of the votes needed to override the veto, the policy was effectively killed at the end of April 2016. Staff are now participating in a PUC review of net metering.

Ath the municipal level, the City Council passed [RESOLVE #7-15/16](#) "a resolve in support of revising and improving Maine's laws and regulations governing solar distributed generation" in February 2016. In April 2016, the City Manager wrote an opinion piece for local newspapers, advocating in support of legislation that would greatly expand access to solar. By these actions, City government and Staff continue to show leadership and a strong commitment to initiatives that will result in energy efficiency, reduced GHG emissions and greater energy resilience not just for those who live and do business in South Portland, but for all Mainers.

Category 2: Municipal Facility-Related Actions

Energy Efficiency Actions

Action #8: Replace existing refrigerators with ENERGY STAR models that are rated as at least 30% more efficient than the current Federal standard. Replace compact refrigerators with one standard size in each department.

Status: **On-Going**

The City is replacing old refrigerators with EnergyStar rated models.

Summary

This change involves all departments with refrigerators. To date, City Hall and the library have replaced aging refrigerators with ENERGY STAR-rated models. Funds for these upgrades are available and the Sustainability Coordinator continues to work with the Police Department, Planning Office, Fire

⁴ Town of Falmouth, Resolution to Support LD 1251. Retrieved from: http://www.town.falmouth.me.us/Pages/FalmouthME_CouncilAgendas/2013/04082013/S03E8960F.1/912013_Resolution_LD1251.pdf

Department, and Water Resources to determine whether upgrades or consolidation are necessary and feasible.

Action #9: Replace individual air conditioners with central systems where cost-efficient, or individual ENERGY STAR units.

Status: On-Going

The City is replacing individual AC units with highly efficient air source heat pumps.

Summary

A majority of City buildings have used individual, window-mounted air conditioning units and until replacement efforts began in 2013, many were over 20 years old. The EPA recommends replacing residential heating and cooling equipment over ten years old with ENERGY STAR models. ENERGY STAR rated units can result in approximately 15% energy savings compared to the older units,

City Hall began replacing individual air conditioning units in 2013 and has since replaced all but three AC units with energy efficient air source heat pumps (mini-splits) with plans to replace the remaining three units in the upcoming year. The Assessor's Office also installed an air source heat pump in 2016. These systems will provide both cooling and heating. They are highly efficient, reducing energy use by as much as 50% compared to individual AC units, and will save money, conserve energy and make City Hall more comfortable for employees.

Each municipal building is configured differently and presents unique challenges which are being addressed by the Sustainability Office on a case by case basis. The Library, Parks and Recreation Department and Water Resource Protection have central air conditioning systems and so this action does not apply to these departments.

The City is currently working with the Police Department to replace as many AC units as practical with air source heat pumps.

Action #10: Separate heat and hot water where the systems are combined, and install an energy-efficient hot water heater with an Energy Star-rating. Continue boiler efficiency improvements through upgrades or replacement with Energy Star-rated models. Prepare and implement a schedule of retro-commissioning of all municipal buildings.

Status: On-Going

The City continues to make efficiency improvements to municipal lighting, heating/cooling and hot water systems.

Summary

The City worked with Siemens Industries to evaluate all 9 School Department buildings and all 27 municipal buildings. In 2010, 2011 and 2012, Siemens completed three paid through performance contracts to optimize performance and improve efficiency of lighting, heating/cooling and hot water systems for all 9 School Department buildings and 15 of the 27 municipal buildings. Siemens performed this work with no upfront capital cost. Instead the City contracted to pay over 10 years, funding the cost through annual energy savings. The 9 municipal buildings not included in the Siemens performance contracts will be consolidated within the new Municipal Services Facility which will include up to date and efficient lighting, heating and cooling systems.

Of the HVAC improvements, Siemens replaced three oil boilers in the Community Center pool building with three high efficiency natural gas boilers and replaced two oil burners at City Hall with two new natural gas burners.⁵

Currently, of 27 City buildings, all but five – the Police Department and Public Safety Building, Police Garage, Fire Garage and Cash Corner and Western Avenue Fire stations - have been converted to natural gas or propane.

Upgrades not included in the Siemens Contracts consist of new HVAC systems at the Branch Library in 2000 and Redbank Community Center in 2004 (*See Action #5*) and installation of new waste oil burners at the Fire and Police Garages.

Between April 2012 and March 2013, improvements and upgrades (in the 15 municipal buildings) resulted in cost savings of \$176,096 and a reduction in GHG emissions that moved the City about ¼ of the way toward its goal of reducing emissions by 17%.

Improved energy tracking and the development of a building energy database (see actions #1 and #5) will form the basis of an energy management plan, which will prioritize energy projects based on high or unexplained changes in energy consumption; persistent failure of building equipment, control systems, or both; or excessive occupant complaints about temperature, airflow, and/or comfort.

Action #11: Install energy efficient LED exit signs

Status: **On-Going**

The City is currently getting cost estimates to complete this action.

Summary

Replacing existing signs that use incandescent bulbs with ones that use brighter, more efficient LED bulbs will improve safety and further reduce electricity use, saving money and reducing GHG emissions. Exit signs were not included in the Siemens contract lighting retrofit of municipal

⁵ See “Siemens Energy Performance Contract: Performance Assurance Report” attached as Appendix C of the Municipal Climate Action Plan for a full list of upgrades completed.

buildings. Some have been replaced with LED, but it is unclear how many and where they are located. A complete inventory is needed. The Sustainability Coordinator and the Buildings Maintenance Supervisor have completed this for City Hall and are in the process of getting cost estimates for transitioning to LED lights building-wide in City Hall as the first of all municipal buildings to be upgraded.

Action #12: Install lighting occupancy sensors in appropriate, intermittently-used rooms in all buildings, and install efficient lighting retrofits in buildings that have not already received this upgrade.

Status: On-Going

The City continues to identify energy efficient lighting improvements.

Summary

Siemens retrofitted 14 municipal buildings with energy efficient lighting fixtures and bulbs and installed lighting occupancy sensors in 10 municipal buildings as part of the performance contract.⁶

Since energy efficient lighting retrofits can be some of the easiest improvements to make, the Sustainability Office will continue to work with City departments, the Buildings Maintenance Supervisor and the City's Sustainability Committee to make upgrades in additional areas and remaining facilities.

Action #13: Creation of a "Green CIP" budget for yearly efficiency improvements of City facilities and infrastructure.

Status: Completed

The City added a "Green" section starting with the 2016 CIP.

Summary

The City added a "Green CIP" section to its Capital Improvement Plan (CIP) which functions as a list of priority municipal sustainability & energy efficiency related capital improvement projects. This section is geared at identifying energy and sustainability projects in each department that can help the City use energy more efficiently, conserve energy, transition to renewable energy and improve the sustainability of City operations.

⁶ See "Siemens Energy Performance Contract: Performance Assurance Report" attached as Appendix C of the Municipal Climate Action Plan for a full list of upgrades completed.

In 2016, the Green CIP funded leases for 2 new Nissan Leafs, preliminary work to replace all City streetlights with LEDs, and the purchase of an energy-use tracking system for network IT devices (see Action #23).

Transportation Actions

Action #14: Replace existing municipal vehicles with better fuel economy models, and establish MPG purchasing standards.

Status: On-Going

The City is replacing vehicles with more fuel efficient or electric vehicles whenever possible.

Summary

The City is committed to greening its vehicle fleet and electric cars will be the vehicle of choice whenever appropriate when the City needs to replace a car. Since the MCAP was adopted, the City has added 4 new electric Nissan Leaf sedans to the municipal vehicle fleet. These electric vehicles (EVs) are being used by the Assessor's Office, Parks & Recreation, Planning & Development and Transit. Five electric vehicle charging stations have been installed to charge these vehicles, including a rapid charge station at the South Portland Community Center. These charging stations are open to the public as well.

The City has also fully implemented its RTA software program, which tracks all maintenance on the City's Public Works vehicles. The PetroVend System (see Action #1) tracks fuel use and mileage information for most City vehicles. These two systems enable City staff to better identify opportunities to phase out and upgrade inefficient, older vehicles.

Action #15: Re-examine the purchase of alternative fuels, such as biodiesel from a renewable source, for all appropriate vehicles and equipment. This item might include the installation of a fueling station for the municipality.

Status: On-Going

The City is piloting the use of local biodiesel in select City vehicles.

Summary

In October 2016, the City began a one-year pilot project to test the efficacy, reliability and performance of biodiesel in ten of the City's diesel fuel vehicles. These municipal vehicles from Public Works, Transit, and possibly other departments will use a B20 blend of biodiesel (20% biofuel, 80% petroleum-based diesel) for ten months of the year. During the coldest two months (Jan-Feb) the blend will be reduced to B10 to avoid any issues with gelling that may cause concern. If the pilot is successful, the City will incorporate biodiesel into its tanks for use by all of the City's diesel vehicles.

According to the California Air Resources Board and the US EPA, biodiesel can reduce carbon emissions in vehicles by as much as 80%⁷. Biodiesel is also one of the cleanest and most efficient ways to reduce greenhouse gas emissions and will help the City reach its Climate Action Plan goals and move it away from petroleum-based fuel toward non-toxic alternatives.

Maine Standard Biofuels (MSB), a Portland company, will supply the City with both biodiesel and diesel at price parity with the City's diesel contract price (\$1.66/gallon). Because MSB manufactures their biodiesel using waste oil sourced from local restaurants, they have strict control over their inputs and blending process, enabling them to produce a consistent and high quality fuel.

Action #16: Purchase, as they become available, systems that reduce the energy usage of add-on equipment vehicles such as police and fire vehicles without sacrificing operational efficiency.

Status: On-Going

The Police Department is piloting the DERIVE system to help reduce emissions while vehicles idle.

Summary

In March 2016, the City Police Department installed the DERIVE system on one Ford Explorer patrol vehicle for a trial period of six months. The trial will assess overall system efficacy as well as fuel consumption and emissions reductions.

Police patrol cars are often left idling while officers perform a wide variety of functions. If the engine is turned off, emergency lights, radios, mobile computer and heating and cooling systems would drain the vehicle's battery. DERIVE's technology reduces the engine RPM from 1000 to about 600 when the vehicle is idle, allowing for full vehicle functionality, while reducing fuel consumption and emissions.

DERIVE can be installed easily on each vehicle for a one-time cost of \$400. With an increase in fuel efficiency of even 2 MPG, the Police Department would see fuel cost savings of \$875 in one year.

Action #17: Strengthen and enforce existing City policy to reduce idling of both heavy and light duty vehicles.

Status: On-Going

A general idling policy is in place.

Summary

The City is required to use cars and trucks for the general conduct of government. However, a vehicle idling gets zero miles per gallon idling and so is an inefficient use of City resources. Enforcement of

⁷ National Biodiesel Board. "Nation's strictest regulatory board affirms biodiesel as lowest-carbon fuel." <http://nbb.org/news/nbb-press-releases/2015/09/28/nation-s-strictest-regulatory-board-affirms-biodiesel-as-lowest-carbon-fuel> (Sept. 28, 2015)

the existing policy presents a challenge as do the number of exceptions (transit buses with passengers, emergency vehicles, and etc.) to the existing guidelines.

Emissions and gasoline consumption could be minimized through enforcement of the City's existing anti-idling policy. A subsequent step may be the development of a City-wide campaign to call attention to the environmental consequences of idling and get people to turn off their engines.

Renewable Energy Actions

Action #18: Power Purchase Agreements for the purchase and installation of solar panels for municipal buildings.

Status: **On-Going**

The City is exploring options for expanding municipal solar power generation.

Summary

In 2012, the City entered in to a Power Purchase Agreement with SoPo Solar, LLC, a subsidiary of ReVision Energy, LLC to install a solar array on the City Planning & Development Department building. This array is now generating zero emissions electricity for the City for \$0.02 per kWh less than standard offer. Taking into account solar orientation, and potential cost savings, the City determined that solar panels were not suitable for either City Hall or the Community Center on Nelson Road. As part of its renovation, the South Portland High School installed solar thermal to generate hot water.

As policy changes are settled at the state level and rebates/incentives improve for solar, the City will keep moving forward to examine the implementation of solar energy projects that can offset its portfolio. By documenting and quantifying benefits and savings, the City hopes to inspire local businesses and taxpayers to expand their use of renewable energy as well.

Action #19: Complete a feasibility analysis and construct a South Portland Landfill Solar Array.

Status: **Completed**

Summary

ReVision Energy completed a feasibility analysis for the City in 2014, for constructing a solar array on South Portland's closed landfill. The City continues to work diligently to create a suitable and cost effective plan to move forward with the proposal. State policy on solar electricity generation continues to evolve and will impact feasibility and municipal decision making on installation of solar infrastructure.

Category 3: Behavior Change and Policy Recommendations

The City recognizes that targeted policies aimed at changing behavior in the workplace have the potential to reduce energy use, save money and can often provide individual health benefits. These policies can be low cost, but can be very challenging to enforce. The City will continue to expand outreach efforts and otherwise facilitate changes in behavior that will provide benefits to City and Staff.

Action #20: Establish purchase and use policies to reduce solid waste.

Status: **On-Going**

General purchasing standards are in place. These need to be more specific and user-friendly.

Summary

Under the guidance of a general green purchasing policy (see Action #4), the City continues to make decisions on a case by case basis. This is progress, but may be improved with the adoption of a more specific, user-friendly purchasing platform. The ERC recommends that the City amend its purchasing policy to place emphasis on the durability of goods, and consider useful life along with cost.

Action #21: Establish and/or expand recycling at all facilities. Encourage employees to utilize the City's single sort-recycling program.

Status: **On-Going**

Recycling bins have been standardized and added to all municipal buildings. Outreach and education is on-going.

Summary

The City provides recycling bins next to all printers and photocopiers, at all employee desks, in break rooms and in all common areas of municipal buildings. The City has also begun adding recycling containers at outdoor areas, with a pilot at Willard Beach (see Action #6). In 2016, uniform waste stations with clear and attractive signage were added to all common areas in the Community Center. These stations include a bin for trash, recycling, and organics for composting. The afterschool program began separating organics for composition in 2015 and this is an expansion building-wide of that effort.

A "Tiny Trash" program was implemented at City Hall and the Community Center, where trash cans were removed from all desk-sides and swapped with quart-size desktop containers. This was to raise awareness about waste reduction and encourage an increase in recycling. It was successful in calling attention to the small amount of waste that is typically generated in offices versus recycling, however the tiny containers were not popular. The Sustainability Coordinator has since transitioned to side

trash caddies that have the same purpose as the quart bins but secure to the side of the recycling bin. This transition has been well-received by City employees.

In addition, over the past eighteen months the Sustainability Coordinator has provided interactive recycling trainings to employees in all City departments, and continues to work with the City's Sustainability Committee to educate and engage staff around waste reduction.

Action #22: Establish and encourage a “lights out” at night policy.

Status: **Not Started**

Summary

Lighting is usually the largest electricity user in City buildings. A “lights out at night” or “while not in use” policy is an attempt to save electricity, reduce pollution and save municipal money. However, the consensus among staff on the Sustainability Committee is that most people turn of their lights each night and that an explicit policy is not needed. Rather, a focus on adding more occupancy sensors in common areas was favored.

Action #23: Establish and encourage the policy of turning off all office equipment at night and on weekends, and pursue new technologies which minimize electricity use by City equipment which must remain turned on or plugged in at night.

Status: **On-Going**

Summary

Through the City's 2016 “Green CIP” (see Action #13), the IT Department purchased and piloted an energy-use tracking system for network IT devices called Cisco Energywise software to reduce power consumption of equipment and found that the savings was not enough to justify the high yearly cost of the software. Instead, the IT Department established four sustainability goals:

1. Established Computer Group Policies that require setting all City monitors to power off after 10 minutes of idle time. IT Department orientation packet states “turn off your computer every night.” This policy duplicated the savings from the Cisco software and has no cost.
2. Purchase only Energy Star Rated equipment – computers, monitors, printers, surge suppressors, etc.
3. Replace aging hardware with Energy Star rated hardware – the majority of old computers and thin clients have been replaced with new Energy Star rated products.

4. Continue to virtualize physical servers – 2 of the remaining 5 servers have been virtualized for a total of 99 virtualized servers. The remaining 3 cannot be virtualized due to current hardware requirements.

Action #24: Promote car/van pooling, public transit, and bicycling as a means of transportation for employees.

Status: **Not Started**

Summary

The City has installed bicycle racks at all staffed municipal buildings. City Hall and the South Portland Recreation Center have shower facilities and lockers available for staff use in order to promote more active lifestyles through walking/biking and reduce vehicular commuting. The Wellness Committee promotes alternative commuting one week a year during the state’s “Commune another way” week. A subsequent step may be to create incentives for employees to try alternative transportation. This will be a challenge

Action #25: Eliminate desktop printers.

Status: **On-Going**

Summary

Desktop printers are expensive to maintain and are not durable. Only a small few City positions need to retain a private printer. To date, City Hall and the School Department have replaced most desktop printers with Department printers/copiers that are shared by all employees. Some desktop printers are being kept in use until they break down at which point they will not be replaced. Other remaining units are needed for specific purposes and will not be replaced with shared units.

CONCLUSION

Having implemented the action items identified in the City’s Municipal Climate Action Plan (and with plans to continue on-going actions), and having met the U.S. Mayors’ Climate Protection Agreement target three years ahead of schedule, the City is poised to move forward, setting a new emissions reduction target and associated actions to achieve it. The City will also use the current plan as a foundation, and the experience it has gained over the past two years to create a community-wide climate action plan which includes commercial and residential sectors.