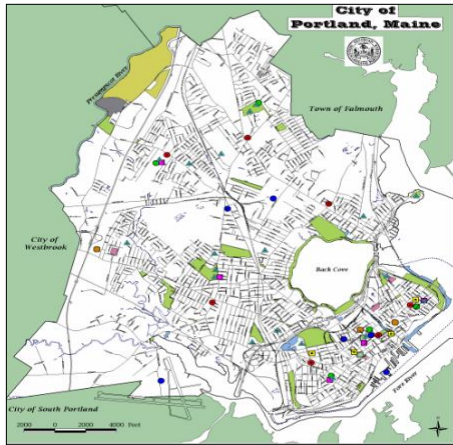




Portland, Maine Municipal Energy Efficiency



General Information

Population: 66,318 (2013)

Policies:

- Environmental Performance Policy (2013)
- Green Building Ordinance (2009)

Projects:

Municipal Energy Savings Performance Contract

Project costs:

\$9.4 Million

Funding:

15 year performance contract, plus
\$200,000 in rebates,
\$400,000 Energy Efficiency Block Grant (EECBG)
\$50,000 in grants from efficiency program

Energy Savings:

1,490MWh/year

Cost Savings:

Projected \$914,687 Annually
Actual First Year Savings of \$999,503

Overview

Portland’s proven commitment to environmentally conscious policies is exemplified through its Green Building Ordinance, energy conscious practices, and a recent performance contract for several energy conservation measures. Each of these policies is explored in detail below.

Green Building Ordinance

Portland’s Green Building Ordinance covers new construction/major renovation of municipal buildings with 2,000ft² floor space, and private buildings with 10,000ft² floor space that receive more than \$200,000 from the city. Municipal building must attain a LEED Silver rating, and private buildings must rise above ASHRAE 90.1 (2010) by 30 for new construction, 25% for existing buildings, and 20% for historic buildings.

Energy Conscious Practices

Portland benchmarks their public buildings on an annual basis to reveals seasonal variations in building use or performance. This process identifies strategic opportunities for investment, and often results in review of a building’s operations or long-term energy performance. For example, periodic benchmarking has revealed opportunities for switching fuels in the summer or changing operating procedures (operating hours, personnel policies, etc) to save money. Benchmarking is also used to target specific buildings for capital improvements based on potential performance opportunities such as oil-to-natural-gas boiler conversions that reduce costly fuel oil usage. Benchmarking also allows for confidence in estimating future utility costs, and can help identify efficiency rebate opportunities.

Energy Savings Performance Contracting



Above: Former Laundry fit at Barron Center, which after retrofit saves the city \$104,000 annually.

The project was a guaranteed savings project, meaning that Portland used an ESCO's energy savings guarantee to help obtain bond financing for the project. A third-party reviewer ensured oversight of the ESCO project development, helped negotiate a contract that was to the maximum benefit of the City, and made sure that the total budget for the project was reasonable compared to the scope of the projects planned. Portland's Sustainability Manager notes that such outside expertise is recommended for any entity considering working with an ESCO.

“Essential to the project's success was the hiring of a third party engineer specializing in ESCO contracts and programs.”

-Ian Houseal, Portland Sustainability Coordinator

By working with an Energy Services Company (ESCO), Portland was successful in garnering public support and funding for energy efficiency projects in municipal and school buildings. As a result, **Portland was successful in saving roughly one million dollars a year** through energy efficiency, cutting its greenhouse gas emissions by over 10%, and reducing its building fuel oil usage by 80%, eliminating the use of bunker fuels used entirely. The projects included lighting improvements, boiler conversions, insulation, and water conservation measures. The ESCO served as the designer, general contractor, commissioning agent, and verified the energy savings.



Above: Former oil-fueled boiler at Deering High School, which has been retrofit to instead use natural gas or fuel oil.

Major Energy Conservation Measures and First Year Savings

- **Energy Management System** install or upgrade at 29 facilities saved \$301,000+
- **Boiler** retrofit or replacements at 16 facilities saved \$266,000+
- **Lighting** retrofits at 34 facilities saved \$176,000+
- **Laundry plant** retrofit at a single facility saved \$104,000+
- **Water Conservation** measures at 10 facilities saved \$63,000+

This case study was prepared by NEEP with information provided by Ian Houseal. To learn more about these projects and policies, please contact IHouseal@PortlandMaine.gov Photo credits: City of Portland, ME.

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