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Major infrastructure improvements that won't break the bank

The City of Olympia is leveraging Energy Savings Performance Contracting

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Like most American cities and towns, Olympia, Washington, manages a portfolio of aging buildings in need of major repairs and updates. And like other municipalities across the country hamstrung by a struggling economy, Olympia has limited funds available for these critical renovations. A 2008 report confirmed what City officials already suspected: 13 City-owned buildings required significant upgrades at an anticipated cost of \$12 million. Most of these buildings were constructed in the mid-1970s. And while facilities staff had kept crucial systems running far longer than anyone would have thought possible, a major overhaul of critical mechanical systems was needed. What's more, during this time period project funding was severely limited by a weak economy. Creative thinking was required in order to overhaul building systems and budget within the City's limited financial means.

An innovative, statewide program designed to help public agencies with infrastructure upgrades was just what the doctor ordered. City administrators learned that Olympia could work with the State of Washington's Department of General Administration (GA) Energy Team to implement an Energy Savings Performance Contract (ESPC).

With an ESPC, the needed infrastructure improvements could be paid for with cost savings from reduced consumption of electricity, gas, water, and solid waste disposal.

After signing an interagency agreement with the GA, the City selected Ameresco Quantum, Inc. from the GA's roster of prequalified energy services companies (ESCOs). The GA's ESPC program provided the City with a streamlined procurement process and enabled it to utilize the GA's ESPC contract. In addition, the GA provided the City with an experienced energy engineer to oversee the project. GA also assisted in securing low-interest financing for ESPCs from the Washington State Treasurer's Office, with rates at just under three percent.

Ameresco Quantum first provided a detailed engineering audit of City facilities. Using data loggers to monitor and measure lighting and HVAC systems, they established an accurate energy use baseline, then designed and engineered the most cost-effective conservation measures. Under the terms of the ESPC, Ameresco Quantum guaranteed the maximum project cost and the annual resource savings. In 2010, with Ameresco Quantum's comprehensive audit in hand, City officials were ready to move forward

with a comprehensive infrastructure improvement program.

Ameresco designed the project to both improve comfort and increase energy efficiency in Olympia's municipal buildings. HVAC systems and building controls were updated, failing equipment replaced, and energy-efficient lighting installed. New low-consumption toilets and urinals replaced aging fixtures. The project greatly improved comfort inside the facilities while reducing demand for energy and water. Buildings that underwent controls, lighting and/or water system upgrades include: Olympia City Hall, Municipal Court Services, Police Annex, Smith Building, Timberland Regional Library, Washington Center, Olympia Center, Family Support Center, Maintenance Facility, West Side Police Station, three fire stations, Command Training Center and the Firing Range.

The most exciting aspect of this ESPC project was the cost and financing structure. Energy- and maintenance-related savings guaranteed by Ameresco Quantum were bundled with monetary support through utility incentives, grants and low-interest loans. This financial package resulted in a project that was cash-flow positive from day one—and will continue to become more

profitable for the City over time as energy costs rise. Funding sources included the City's Capital Repair and Replacement Fund, incentives from Puget Sound Energy and LOTT Clean Water Alliance, and most significantly, low-interest financing repaid from over \$190,000 per year in guaranteed savings. The Washington State Treasurer's Local Option Capital Asset Lending or LOCAL program plays a pivotal role in ES-PCs, enabling public agencies to borrow project funds at below-market rates. You can learn more about that program by visiting the LOCAL website: <http://www.tre.wa.gov/LOCAL/index.shtml>.

Equally important, the project results in environmental benefits that are real and measurable, helping the City of Olympia maintain its status as a national leader in environmental conservation. These measures have substantially reduced the City's demand for electricity from the local utility, Puget Sound Energy, which relies heavily on hydroelectric power. As a result, stream and river flows will be improved—which enhances the habitat of endangered species including the wild salmon population—and greenhouse gas emissions have been reduced dramatically, including a reduction of CO₂ emissions of more than 1.3 million pounds per year. In addition, the project will save more than 20 million gallons of water annually.

The City of Olympia's ESPC project serves as a model for municipal governments throughout the United



The City of Olympia, Washington, is leveraging an energy savings performance contract with Ameresco Quantum. The citywide project guarantees Olympia will save nearly \$200,000 on annual utility costs, and it includes infrastructure improvements to City fire stations, including the Fire Department Headquarters, pictured here. (Photo courtesy of the City of Olympia)

States. Complex systems were upgraded with energy efficiency, positive environmental impacts, and long-term savings in mind. State-of-the-art technologies have created safe, comfortable environments for hundreds of City employees as well as the residents who visit these buildings every day.

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Olympia, Washington: The Power of Energy Savings Performance Contracts

Facility Improvements:

- 1. Direct Digital Controls (DDC) and Energy Management System (EMS) upgrades:** Old, failing pneumatic and electronic control systems were replaced with state-of-the-art technology, saving energy and improving comfort through better control of HVAC systems.
- 2. Deteriorating Hot Water Boiler Systems:** New high-efficiency boilers were installed at City Hall, Timberland Regional Library, and Olympia Community Center. The new boilers replaced failing systems and are less expensive to operate.
- 3. New Chiller (City Hall):** A new air-cooled chiller replaced the single pass cooling unit, eliminating over two million gallons per year in water and sewer fees.

4. Lighting Conservation Measures (Citywide):

Old lighting systems throughout the city were retrofitted or replaced with new energy-efficient lighting. The new lighting provides better light output with less energy, and eliminated the use of T-12 lamps, which in the near future will no longer be available.

5. Water Conservation Measures (Citywide):

New low-consumption toilets, urinals, and reduced flow aerators were installed. The resulting reduction in water use reduces the City's water and sewer costs, as well as the volume of water that must be heated.

Costs:

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| \$2,708,368 | Total Project Cost |
| <u>(\$774,243)</u> | Estimated Utility Incentives & Other Grants |
| \$2,064,125 | Estimated Net Project Cost |
| (\$320,000) | Capital Repair and Replacement |
| \$1,614,125 | Amount to be Debt Financed |
| \$190,824 | Guaranteed Annual Utility Savings |

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