

Case study

City of Cumberland

Cumberland, Maryland



City expands scope of performance contract in pursuit of vision

Cumberland, MD, founded in 1787, is a small city of 24,000 residents in the Appalachian Mountain foothills of Maryland's panhandle. To make necessary infrastructure upgrades and to pursue its vision of implementing new technology to benefit everyone in the community, the city called on Johnson Controls. A Performance Contract not only improved energy efficiency and comfort, but underwrote an automated water meter retrofit and installation of a citywide WiFi system.

The city of Cumberland is emerging from lean years that saw a reduction in manufacturing jobs, a smaller tax base and a reduced population. While the city's economy is on the upswing now, it lacked the funds necessary to conduct critical infrastructure upgrades and to implement energy-savings projects. Additionally, the city was exploring an investment in more sophisticated automated meter reading technology (AMR) and the development of a citywide WiFi system.

Cumberland entered a Performance Contract with Johnson Controls that included HVAC system retrofits and infrastructure upgrades at sites throughout the city. In discussing the scope of the contract, Cumberland representatives, Johnson Controls and the county's wireless network administrator concluded that an AMR system could be added to the project package, significantly increasing the net financial return. They also identified that the AMR system could help cost-justify installing a citywide WiFi network.



All told, the modified Performance Contract will yield \$8 million in energy and operational savings over its 15-year life, while improving water utility cash flow, and providing residents and visitors with Internet access.

Leveraging new technology

The automated water meter reading project took advantage of the expanded wireless broadband network owned by the city, county, and the county school district and library system. In addition to improving the AMR installation, a better broadband network was critical to attracting new businesses and revitalizing the economy.

“As a result of the project, we expect to reassign 1.5 full-time service technicians, thus reducing labor, and more effectively manage our utility’s finances and the water supply itself,” says Jeff. E. Repp, city administrator for Cumberland. Repp added that there are many additional benefits:

- Improved cash flow – the AMR system reads meters and will facilitate billing to residents monthly instead of quarterly, moving revenue receipts forward by two months.
- Reduced water losses – more frequent water meter readings help with earlier leak detection and repair.

- Protecting property – leaking and broken water pipes can cause significant damage, so earlier detection and repair reduce property damage.
- Preserving system capacity – as water usage grows closer to peak capacity, the detection of leaks and avoidance of losses gain importance. Every 100,000 gallons of water conserved in the system helps postpone multi-million-dollar investments in treatment plant expansions.

Conserving energy

Energy-saving projects under the Performance Contract are designed to give the city long-term fuel and electricity savings. Improvements include installation of a Johnson Controls Metasys® building management system and web-based digital controls in the City Hall and Public Safety Building. The systems provide accurate, zoned climate control of the buildings, and wireless Internet capability for secure remote monitoring and control.

Additional energy saving improvements included replacing incandescent traffic lights at 27 intersections – with more efficient LED technology. Lighting retrofits in the City Hall, Public Safety Building and Municipal Service Center will lower electricity costs and increase lamp life.

“ What began as a conventional HVAC and lighting upgrade, mushroomed into a bigger project with much greater and long-term savings for the city and our residents.”

JEFF E. REPP
CITY ADMINISTRATOR
CITY OF CUMBERLAND



Building weatherization in these facilities included adding weatherstripping to doors, caulking windows, installing insulation and thermal panels, plus replacement of seven garage doors at the Public Safety Building. Window film was applied to reduce summer heat penetration and increase winter heat retention. An old gas-fired boiler at the facility was replaced with a high-efficiency gas-fired unit and four infrared heaters were added to the Municipal Service Center.

Combined benefits that last

“What began as conventional HVAC and lighting upgrade mushroomed into a bigger project with much greater savings, and the side benefit of a

citywide WiFi network,” says Repp. He indicates that in the future, the city may lease the system to private Internet providers, which could bring the city additional income.

The WiFi system has potential for other uses, including in-vehicle communication for public works crews. “It is a versatile system that most likely could not have been cost-justified if not for the meter replacement program,” states Repp. “Beyond energy savings, the Performance Contract will save the city of Cumberland substantial operating costs and will improve public services to our residents.”



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