Case study

City of Compton

Compton, California

City improves infrastructure and safety while reducing costs

Compton, California is rapidly emerging as a large industrial center in Los Angeles County. Home to nearly 100,000 citizens, Compton is known as the "Hub City" because of its unique position in the geographical center of the county. The city's mission is to be a viable, self-reliant and safe community. In pursuit of this mission, Compton entered a performance contract with Johnson Controls for infrastructure upgrades that will provide more than $4 million in energy and operational savings.

Beautifying the city, sustaining a vibrant economy, and providing effective and efficient public services are Compton's primary goals. But, at more than 100 years old, the city was challenged with an aging infrastructure and failing HVAC equipment. According to Barbara Kilroy, city manager, years of political changes had diverted resources from maintaining facilities, resulting in significant deferred maintenance. "We needed to resolve multiple, expensive problems. However with a static tax base and limited income streams, we lacked the funds necessary to make the improvements," said Kilroy. "Johnson Controls approached us with a solution for making the necessary upgrades on a cash-neutral basis, outlined the potential savings and operational benefits, and helped obtain the buy-in of the city council."

As a result, Compton entered a project development agreement with Johnson Controls to identify ways to use energy savings and revenue enhancement to make the capital improvements. The agreement leverages existing legislation, enabling cities to fast-track energy savings opportunities. Phase one of the agreement consisted of a performance contract for energy-related improvements that will be financed through guaranteed energy savings. A second phase consists of citywide water meter replacement, which will allow for automated meter reading.

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Upgrades focused on comfort, efficiency and safety

The performance contract included lighting retrofits throughout the city's facilities. Occupancy sensors were installed to improve energy savings. Old ceiling tiles in the City Hall were also replaced, which greatly improved the interior appearance of the building and the morale of employees working there. City-owned street lighting was upgraded from high-pressure sodium and metal halide fixtures to energy efficient induction lighting systems. When the City Hall's chiller failed on one of the hottest summer days, Johnson Controls provided temporary chillers to keep the facility cool until permanent replacement chillers could be installed. Additionally, existing controls in the City Hall were replaced with a Johnson Controls Metasys® building management system. Johnson Controls will maintain the system along with the HVAC equipment under a planned service agreement.

The performance contracting measures allowed for more than $3.9 million of needed improvements for Compton. Benefits from these improvements include:

- Energy and operational savings of more than $4.4 million are guaranteed over the 15-year term of the contract.
- Lighting retrofits in parks and on the streets replicate natural light, improving brightness, visual acuity and public safety while lowering light pollution.
- The chiller and cooling tower replacement improved comfort and reliability while reducing operating costs.
- The Metasys system provides for better monitoring and control of lighting and HVAC equipment for improved comfort and lower cost of operations.
- Ceiling tile replacement in the City Hall improves the aesthetics and enhances the new lighting technologies.
- The planned service agreement allows for continuity of service and operations of HVAC equipment and controls.

"It all adds up to improved comfort and safety for our employees and citizens. And, with more efficient equipment and improved monitoring and control through the Metasys system, we'll reduce operational costs over the long-term," says Michael Harvey, project manager for Compton.

Facilitating infrastructure improvements

Johnson Controls conducted a detailed analysis of the city's infrastructure to determine the best and most impactful energy savings measures. The analysis was reviewed by the city's staff and a third party engineering organization, who found the analysis technically viable and offered final contract recommendations.

"This was an important step in the project development process. As a city, we're responsible for spending tax

dollars wisely and ensuring the outcomes will truly benefit the taxpayers," says Isadore Hall, fourth district councilman for Compton. "Johnson Controls worked closely with us and our consultant to identify what improvements made the most sense and then define the savings we could expect."

During the course of this analysis, Johnson Controls engaged an independent street lighting expert to measure light levels throughout the city and prepare an audit that will assist with long-term street light planning. Before the replacement project was implemented, the proposed street lighting was installed in a specific area to demonstrate the improved visual acuity and lighting quality. Similarly, Johnson Controls installed demonstration lighting in the City Attorney's office to show how the proposed interior lighting retrofit would improve the work environment. Johnson Controls also implemented a leak detection program during the first phase of the project, providing Compton with a comprehensive analysis of the city's water infrastructure. This will help the city plan for future underground water utility and meter upgrades. As part of this process, Johnson Controls has been able to help Compton evaluate the current rate structure compared to other municipalities in the area – and the revenue that will be needed to provide for ongoing infrastructure maintenance.

Contributing to disaster preparedness.

Johnson Controls sourced FEMA recommended vests and saddlebags that the City of Compton distributed to 1,200 employees and first responders as part of a disaster preparedness educational event.

The equipment was funded through savings generated by using alternative lighting fixtures in the street lighting retrofit than were originally specified and budgeted. The fixtures provide the same lighting level and whiteness at less cost and less energy consumption.

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