

# City of Lawton



“The cost of our physical servers and the cost of some of the support software will no longer be required. The management and maintenance tools that we will have available now are so much more sophisticated and efficient compared to what we have had in the past. This is an exciting change for us.”

Cindy Price, IT Supervisor

## THE OPPORTUNITY

In 2007, the City of Lawton wanted to be a model for other small Oklahoma towns to address environmental concerns and bring continual benefits to its residents, while also cutting operational costs. City leaders partnered with ENGIE Services U.S. (ENGIE) to design, implement, and complete various efficiency improvements in the City, with a focus on water and wastewater solutions.

## THE PARTNERSHIP

### Phases I and II

A focal point for these projects was extensive water meter retrofits, enabling automated meter reading capabilities. The installation of 30,811 new water meters across the city sharply cut costs as well by providing a greater level of accuracy through a fixed-based communication system. Benefits of the new system include more accurate readings, which in turn improves billing and collection efforts. Labor was redirected from meter reading to other core mission objectives and meters provided real-time information that enhanced leak detection and other service capabilities. Additionally, ENGIE installed new diffusers and provided control improvements at the wastewater treatment plant that allowed City staff to utilize increased water revenue through water meter change-out and operations and maintenance savings through Automated Meter Reading (AMR). Finally,

### By the Numbers

- Increased revenue by nearly \$1.5MM as a result of the first two phases of improvements
- Reduced CO<sub>2</sub> emissions by over 738 metric tons each year, the equivalent of removing over 156 cars from the road over Phases I through III
- Phase II costs entirely covered by American Recovery and Reinvestment Act (ARRA) grants totaling \$856,000

### Technical Scope

#### Phase I

- Over 30,800 new water meters installed along with Automatic Meter Reading (AMR) technology
- New energy management systems (EMS) and building automation systems (BAS)
- Extensive lighting upgraded over 7,000 lighting units to energy-efficient T8 and electronic ballasts



### Technical Scope (continued)

- Thermostat and air-cooled condenser upgrades
- Wastewater Treatment Plant (WWTP) upgrades to the Supervisory Control And Data Acquisition (SCADA) system, solids retention time (SRT) control and aeration, diffuser replacement and nitrification basin control

### Phase II

- Boiler and chiller upgrades/replacements
- New infra-red heaters
- Additional EMS and BAS upgrades
- Additional condenser upgrades

### Phase III

- Server virtualization
- Voice Over Internet Protocol (VoIP)
- Data Network Upgrade
- Boiler and chiller upgrades/replacements
- Exterior LED lighting
- New entry vestibules at 2 facilities
- Additional upgrades to the WWTP SCADA system

the scope of work for these two phases also included replacement of boilers and chillers at the police station, city-wide LED traffic lights, and repairs to the SCADA system at the WWTP. These combined upgrades create safer, more efficient systems and traffic solutions that take less maintenance and create better live and work environments for local residents.

### Phase III

In 2017, the City had major needs to upgrade its IT infrastructure, including new improvements to the data network, server virtualization, and Voice over Internet Protocol (VoIP). Over the past 15 years, Lawton has increased from five servers to over 30 to meet the City's growing needs. This project moved 25 of the existing servers into a virtual server environment. The entire virtualized server environment will now physically reside on three new servers that will remain in Lawton and be remotely managed by a trusted third-party provider.

The City was also still using an antiquated telecommunications system with limited capabilities that was scheduled to be discontinued by their existing carrier. This project converts the entire City to a new Vertical VoIP system that provides direct dial capabilities and enhanced features, with net savings of \$16K per month compared to the \$40K previously spent on the original platform.

Finally, a few of the larger sites, like the City Hall Annex, Police Station and Library, had adequate bandwidth to support the new VoIP system, but the majority of the City's smaller facilities utilized inadequate microwave data communications that are vulnerable to weather and receiver obstructions. This project brings internet service directly to those smaller facilities, creating three discrete zones in a fully meshed network to provide a redundant network and boiler call paths.

Phase 3 included replacing the boiler and chillers at the Main Library, as well as exterior LED light fixture upgrades at 21 city facilities and the installation of entry vestibules at City Hall and McMahon Auditorium.

## 3 DIMENSIONS OF IMPACT

ENGIE is committed to building three dimensions of impact in every customer's future:



**Supporting People**



**Saving Money**



**Protecting the Environment**

The water meters were part of a larger citywide project, which includes lighting retrofits and LED traffic signals. Moreover, the equipment replacements and installation of city-wide LED traffic lights will help to create safer living and working conditions for all residents. With CO<sub>2</sub> emissions reductions of 175 metric tons each year and guaranteed annual energy savings of more than \$1.5MM, when adding all 3 phases together, the program makes a strong statement about the City's role in environmental stewardship while setting a national example in providing optimal solutions in the area of wastewater treatment.