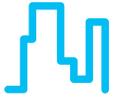# City of Denison, Texas

CUSTOMER BENEFITS

- Guaranteed savings with fixed project costs
- Reduced energy consumption and costs
- Project risk transfer
- Single contact for service and support
- Process enhancements and improved system maintenance capability at wastewater treatment plant

PROJECT AT A GLANCE

Project Type:
Performance contract

Location:
Denison, TX, U.S.

Properties:
- Wastewater treatment plant
- 11 municipal facilities (120,000 ft²)

Funding:
Energy savings and rebates

ECMs:
- Renovations to wastewater treatment plant:
  - New fine bubble diffusion system
  - Variable flow blowers for optimized control
  - Reduced aeration basin blow load
- HVAC replacements
- Lighting retrofits
- New energy management system (EMS)

Annual Savings:
$217,727

Installation:
2013

Determined to optimize energy use and capital spending, the City of Denison utilized Texas Local Government Code 302 to leverage savings to implement major capital improvements through a performance contract with Schneider Electric.™

The Challenge

Located just 75 miles north of Dallas and 4 miles south of the Texas-Oklahoma border, Denison was founded in 1872. Today, this charming locale is home to 24,000 residents.

In addition to being the birthplace of notables such as Dwight Eisenhower and Chesley "Sully" Sullenburger ("hero on the Hudson," who safely landed a disabled jetliner on that famous river), Denison is also known for its numerous historic sites. Designated as a "Texas Main Street City" in 1989 by the Texas Historical Commission, the 30-block downtown area is also listed on the National Register of Historic Places.

By 2012, several municipal facilities were in need of significant renovations. The wastewater plant placed a burden on the city's utility budget because it had aged assets with failing components, impairing the ability of the city to operate the systems at the optimum level of performance and energy efficiency. At the same time, other facilities needed replacements for outdated HVAC and lighting systems to improve comfort levels and operating efficiency.

Schneider Electric™

Make the most of your energy℠

"Schneider Electric worked closely with us to identify a cost-effective way to make upgrades in our municipal buildings through the creative and low-risk funding mechanism of an energy savings performance contract."

Jared Johnson
Mayor, City of Denison

Aware of performance contracting as an effective way to fund necessary renovations through energy savings, decision-makers began talking with Schneider Electric about the city's current and future needs. (A performance contract guarantees the energy savings, and Schneider Electric agrees to pay the difference if the city does not realize those savings.)

Ultimately, city officials agreed to tackle multiple improvements at the same time by leveraging energy savings guaranteed with a performance contract. Challenges on this project included taking the wastewater plant offline for a brief period, installing new equipment and systems in some facilities, and renovating other facilities throughout the city — all while keeping Denison open for business. Undaunted by these challenges, Schneider Electric got right to work.

The Solution

Typically, new and more efficient equipment and automation systems generate utility savings while maximizing operational efficiency. To reap those benefits, Schneider Electric worked closely with city officials and their preferred water and wastewater design engineer to develop a project that would address major needs and also focus on more efficient systems and operations.

The first order of business addressed issues at the wastewater treatment plant. Schneider Electric replaced failed control gates and made various other improvements to the aeration basin and aerobic digester equipment. (Wastewater undergoes biological treatment in the aeration basin; biodegradable waste undergoes treatment in the aerobic digester.)

In addition to exchanging a coarse bubble diffuser grid with new, fine bubble diffuser grid, Schneider Electric replaced three 250 hp constant-speed aeration blowers and four 105 hp maintenance prone pumps with smaller, more efficient equipment. Variable-flow blowers optimize control and reduce the blow load from 500 hp to 300 hp in the aeration basin.

Facilities ranging from City Hall, fire and police stations to the library, communications center, and service center all received upgrades as well.

To improve comfort levels and enhance operating efficiency in various facilities, Schneider Electric installed occupancy sensors that turn off lights in unoccupied rooms, and exchanged inefficient T12 lamps and magnetic ballasts with more energy-efficient T8 bulbs and electronic ballasts. Schneider Electric also replaced rooftop units and split systems at various city buildings.

Installation of a new citywide EMS enables more energy- and cost-efficient operations. The new EMS also provides centralized control, flexible scheduling, and remote access.

Schneider Electric also brought additional benefits to the attention of Denison officials and assisted them in applying for rebates to help offset the cost of the improvements.

The Bottom Line

Committed to improving energy efficiency of local government facilities, the utility company offers energy rebates through CLEAResult and the Government Facilities Program. Schneider Electric helped the City of Denison qualify for a $64,000 rebate for HVAC and lighting and approximately another $165,000 rebate for process improvements to the wastewater treatment plant.

The wastewater treatment plant has a capacity to treat 6 million gallons per day. Prior to the improvements, the plant operated at full capacity to maintain the integrity of the process even though it was treating just 3 million gallons per day. The aging and/or malfunctioning equipment had been placing a significant burden on the city's operating budget prior to the upgrades.

The City of Denison is leveraging the guaranteed annual savings from the performance contract to make the necessary improvements, thus freeing up capital funds to address other city needs.