Siemens refreshes city of Conroe, TX, with capital improvements

City of Conroe

Client Background

The City of Conroe, TX, is located 40 minutes north of Houston in the heart of Montgomery County, the birthplace of the Texas Flag. The community prides itself in its rich history and tradition as seen in its preservation efforts of historic buildings in the downtown area.

Client Objectives

The city's current population of approximately 45,000 is rapidly growing and with it several infrastructure and capital improvements became a necessity. Faced with rising energy costs, finding room in the capital budget to make these improvements was a major obstacle. The City of Conroe was actively looking for ways to make changes and cut costs with its Lean Thinking initiative.

Siemens Solutions

Responding to a Request for Qualification in May 2005, the Siemens Houston Branch, led by Chad Nobles, Account Executive, proposed a performance contract solution that allowed the City of Conroe to make several utility upgrades while allowing the energy savings and increased revenue to pay for the capital improvements. The total contract for $7.17 million covered a multitude of projects, including traffic signal upgrades, comprehensive lighting upgrades, building water fixture retrofits, HVAC efficiency improvements, and an energy management system installation. Additionally, two projects standout by offering groundbreaking technology along with substantial energy conservation and operational savings – the new automatic reading water meter system and the wastewater treatment plant improvements.

As a traditional water meter ages, it becomes inaccurate and unable to record all of the water flowing through it. Essentially, the city ends up paying for much of its citizens' water usage because it prepays the utility company for the water usage or water it pumps from wells and does not recuperate the cost of the water via utility billing. As part of its contract with Siemens Industry, Inc., Building Technologies Division, the City of Conroe changed out all of its 11,500 water meters for residences and businesses with an advanced water meter system that uses radio waves to provide automatic readings. Each water meter is equipped with a radio antenna that emits a signal that is read by an on-board laptop or hand-held computer. In this way, the meter reader can capture the reading without leaving the city vehicle, which dramatically improves the time in which the meters are read.

Another innovative capital improvement included in the same performance contract was the wastewater plant improvements. Siemens installed an advanced aeration system, including new single stage blowers, to upgrade the city's system from a course to fine bubbler that significantly decreased energy consumption.

Client Results

The new water meters provide several advantages over the old system. The new system captures accurate figures on water usage to the nearest one-eighth of a gallon so that the city can ensure that customers are billed appropriately for their water usage. Additionally, the cost of replacing the water meters will be paid for in operational savings and revenues from lost water over the next 15 years as part of the performance contract.

Building Technologies

SIEMENS

The new system is also guaranteed by Siemens via a performance assurance agreement to ensure all energy savings and operational savings are produced. This agreement randomly tests and monitors the system improvements to prove its continued accuracy and efficiency.

One of the hidden advantages of the new water meter system is the cost savings from reduced employee injuries and worker's compensation claims from hazards out in the field. Besides commonly being chased out of yards by protective dogs, city workers have encountered various wildlife creatures and battled the elements over the years while reading meters. Since the new water meters offer an advanced technology where meters can be read from a vehicle-mounted laptop, employee injuries are dramatically reduced. The automatic meter reading process allowed the city to reduce the meter reading staff creating operational savings. It used to take nine to 10 days a month to read 4,000 to 5,000 meters, and now it only takes three to four days to read the entire city. "We are fully satisfied with the labor savings that the automated system provides," explains Steve Williams, Director of Finance for the City of Conroe. "It has made life easier."

In the first month with the new technology, the wastewater plant's energy consumption dropped by 351,360 Kilowatts at a savings of $28,779. The energy savings was so significant that the utility provider actually contacted the wastewater plant to inquire about any problems or to see if part of the wastewater plant shut down. Dean Towery, Director of Public Works, and his staff were happy to report that the plant was operating efficiently and to learn that the plant's energy consumption was cut in half. Towery comments, "It looks like our energy savings will be even more than the original projections. We have had a good experience with Siemens, not only because of the energy savings but because of their responsiveness to issues."

Paul Virgadamo, Assistant City Administrator, was also very satisfied with Siemens performance, quick response time, and ability to resolve issues with positive results. Virgadamo explains, "It is still early after the project completion, but we are excited to see the annual savings that the upgrades and new technology installations will provide. We have already seen some electric and wastewater plant energy reductions of over 50 percent based on the new equipment. The performance contract aligns with our Lean Thinking strategy." The total project guarantees an annual savings along with increased revenues of $750,000 per year over 15 years.