

Siemens Guarantees Big Savings in Big Spring



The City of Big Spring is located in the heart of west Texas, approximately halfway between Dallas and El Paso. Named after the “big spring” in Sulphur Draw, the area attracts nature enthusiasts and offers several outdoor recreational activities along with “300 days of sunshine a year”. Because oil related industries and agriculture play a significant role in Big Spring’s economy, the rising oil and gas prices were especially taxing on the City of Big Spring’s operational budget. Additionally, its current population of over 33,000 is growing and with it several infrastructure and capital improvements become a necessity. Faced with rising energy costs and aging infrastructures, the municipality turned to Siemens Building Technologies, Inc. to help find energy savings and focus on ways to promote its efforts toward safe and effective environmental solutions.

Late in 2005, Chad Nobles, Account Executive for the Siemens Texas branch, met Gloria McDonald, City of Big Spring council woman, at the Texas Municipal League trade show. Chad explained the concept of performance contracting that would allow the City of Big Spring to make several utility upgrades while allowing the energy savings and increased revenue to pay for the capital improvements. McDonald was impressed with the

potential to make city improvements without raising taxes or a bond election, so she facilitated introductions to the city staff and eventually key members of city council. After Siemens held several workshop sessions for council and staff to educate them on the legislation and benefits of a performance contract, the City of Big Spring signed a contract with Siemens in April 2006. “Siemens found out our specific needs and educated us on the equipment and technology that would provide our citizens the most fair and consistent costs for their water and energy consumption,” explains McDonald. “Siemens was upfront about the guaranteed savings and this project fits nicely into our mayor’s ‘Clean and Green’ motto. It’s a good thing anytime a city can save money and cut back on energy consumption, particularly now that water and energy are at a premium price.” Nobles further explains, “This project allows the city to improve its lighting, air conditioning, and other utilities without the need to increase capital or budget. The expenses are covered by the current operating budget and the savings are guaranteed. If we do not save Big Spring what we promised, then we cut the city a check for the difference.”

The total contract for \$5.6 million covered a multitude of projects including:

- Energy efficient lighting for traffic signals;
- Energy efficient interior lighting in almost every city facility;
- Low flow flush valves and aerators as part of building water fixture retrofits;
- Energy efficient HVAC units;
- Upgraded pumping and controls at various lift stations;
- Enhancements to the wastewater and water plant;
- Energy management system to control the building environments; and
- Automatic meter reading (AMR) system with city-wide water meter installations.

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The AMR and water meter retrofit was the cornerstone of the project based on Big Spring's key interests and needs. 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 Building Technologies, Inc., the City of Big Spring installed or upgraded over 8,300 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.

The new water meters provide several advantages over the old system. The new system captures accurate figures on water usage 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 fifteen years as part of the performance contract. 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. Todd Darden,

Director of Public Works, comments, "I am glad we were able to complete the AMR project with Siemens via the performance contract. Otherwise, the city would have been replacing water meters piecemeal without introducing the technological advances that this system offers. Eventually, it would have cost the taxpayers hundreds of thousands of dollars." As it is, the new AMR system does not raise the taxpayers' costs for water consumption.

Another advantage 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. Many meters are located in very remote areas containing various hazards as well as access issues. Since the new water meters offer an advanced technology where meters can be read from a vehicle-mounted laptop, employee injuries and the time it takes to read meters are dramatically reduced. Big Spring also anticipates a reduced work force of the meter reading staff resulting in further operational savings since the new AMR system allows the city staff to accomplish the same amount of meter readings in a few days that used to take them an entire month.



The total project guarantees an annual energy savings along with increased revenues of \$600,000 per year over 15 years. Due to the additional savings and increased revenue from the conservation measures and meter project, the city was able to fund renovations to the city owned golf course. Before the project, the city was only able to renovate one green per year, but due to the additional savings in the operational budget, Siemens renovated the remaining fourteen greens and fairways, updated the irrigation system, and added signage, cart paths, tee boxes, and green complexes. Darden acknowledges, "Without the performance contract project, this golf course would not be a reality. It allowed a smaller community without a large tax base or revenue stream to complete projects that otherwise may have never been started."



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