

WATER WEALTH:



RECOUPING REVENUE AND SAVING ENERGY WITH SMART INFRASTRUCTURE

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The financial stability of a local government is essential for consistently delivering vital public services, maintaining infrastructure, and fostering economic development, all of which collectively enhance the community's well-being and resilience. It also builds public trust and ensures the government can respond effectively to emergencies and long-term challenges. On the other hand, aging infrastructure can leave a local government crippled with deferred maintenance and rising energy bills—ultimately impacting the taxpayers.

One of the most significant areas that local governments can invest in is water infrastructure. As utilities' water infrastructure ages, inefficiencies and water loss escalate, leading to substantial increases in maintenance and energy costs as the system exerts additional effort to compensate for the "lost water" to meet customer demand. Local governments are increasingly turning to innovative technologies to enhance their utility operations and bottom line. Among these technologies, smart metering, Advanced Metering Infrastructure (AMI), and distribution leak detection strategies stand out as transformative solutions that can help recoup lost revenue and achieve significant energy savings.

RECOUPING REVENUE

1. Enhanced Billing Accuracy:

Traditional mechanical meters degrade over time, leading to inaccurate readings and billing discrepancies. Smart meters read ultrasonically or electromagnetically, providing precise real-time data on energy and water usage. This accuracy ensures that consumers are billed correctly, eliminating revenue losses due to underreporting and inaccuracies. Accurate billing also builds customer trust and reduces disputes, streamlining revenue collection processes.

2. Reduction in Non-Revenue Water (NRW):

Non-Revenue Water, which includes water lost through leaks, theft, or meter inaccuracies, is a significant issue for many water utilities. AMI systems enable continuous monitoring of water flow and usage patterns, quickly identifying anomalies that may indicate leaks or unauthorized usage. Prompt detection and repair of leaks minimize water loss and recover revenue that would otherwise be lost.

3. Improved Meter Reading Efficiency:

Traditional meter reading is labor-intensive, requiring physical visits to each meter. Smart meters transmit usage data remotely, reducing the need for manual readings. This not only cuts down on labor costs but also eliminates the errors associated with manual data collection. The efficiency gains from remote reading translate into significant operational cost savings.

4. Real-Time Data Analytics:

Smart meters and AMI systems generate vast amounts of data that can be analyzed to gain insights into consumption patterns and demand fluctuations. Utilities can leverage this data to optimize their operations, improve demand forecasting, and implement dynamic pricing models that encourage off-peak usage. These strategies can enhance revenue streams and ensure a more balanced distribution of resources.

ENERGY SAVINGS

1. Optimized Energy Consumption:

Smart meters provide consumers with detailed, real-time information about their water usage, enabling them to make informed decisions about their consumption habits. By encouraging water-efficient practices, such as reducing wasteful use, smart meters help lower overall demand. This demand-side management is crucial for reducing the overall demand for water, minimizing the need for additional water treatment and the power needed to provide the water.

2. Reduced Operational Costs:

By automating many aspects of utility operations, AMI systems reduce the need for manual interventions and maintenance. Automated meter readings, remote readings, and real-time monitoring streamline operations and lower the costs associated with maintaining and servicing the water metering infrastructure. These operational efficiencies translate into substantial savings over time.

Overall, water infrastructure is essential to a municipality's financial health, public welfare, environmental sustainability, and overall operational efficiency. When local government leaders prioritize investment in their water systems, the benefits extend far beyond mere financial gains, fostering community well-being and environmental stewardship. 🌱



CITY OF LAS CRUCES

WATER INFRASTRUCTURE UPGRADES IGNITE ENERGY EFFICIENCY AND RENEWABLE ENERGY IMPROVEMENTS AT LAS CRUCES

Organ Mountains, Photo provided by Johnson Controls

Located in southern New Mexico at the foot of the Organ Mountains and along the banks of the Rio Grande, Las Cruces enjoys 350 days of sunshine a year. The City is home to more than 95,000 residents, making it the second-largest city in New Mexico.

In March 2018, the City executed an Energy Performance Contracting (EPC) agreement with Johnson Controls to implement an Advanced Metering Infrastructure (AMI) program for 81,000 water and gas meters and deploy an automatic leak detection system. The project's success motivated

Las Cruces leadership to extend the EPC in 2021 to include energy efficiency and renewable energy upgrades to the City's water and wastewater facility and energy efficiency improvements to city facilities and parks. By utilizing a self-funding procurement vehicle, an EPC, the leadership of Las Cruces identified a truly sustainable solution that will positively impact the community, the economy, and the environment.

PHASE 1

PROJECT SCOPE:

NEW AMI SYSTEM:

- Installation of the Itron ChoiceConnect AMI system for 81,000 water and natural gas meters
- Eliminate mobile and manual meter readings and substantially reduce operating costs
- Utility staff can proactively maintain utility revenue streams with the data analytics software

NEW ACCURATE WATER METERS:

- Replacement of 29,000 water meters with new more accurate, longer-lasting meters
- Superior accuracy at low flow rates translates into increased billable water and sewer revenues
- 20-YEAR WARRANTY

AUTOMATIC LEAK DETECTION SYSTEM:

- Installation of 18,000 Itron leak sensors immediately upstream of customer water meters
- Continuously identifies, prioritizes and maps probable and possible leak sites
- Utility staff can proactively reduce water losses

CUSTOMER WEB PORTAL:

- User-friendly web portal for all water and gas customers
- Real-time consumption analysis (history and trends)
- Alerts and notifications (leaks, high usage)

PHASES 2 & 3

PROJECT SCOPE:

ENERGY EFFICIENCY AND RENEWABLE ENERGY IMPROVEMENTS AT WATER AND WASTEWATER FACILITIES:

- Energy efficiency improvements at three wastewater plants
- Wastewater Supervisory Control and Data Acquisition system
- Lighting, HVAC, & Direct Digital Control (DCC) system upgrades
- Cogeneration plant improvements
- El Paso Electric accounts—rate conversion

ENERGY EFFICIENCY IMPROVEMENTS AT 112 FACILITIES AND PARKS TOTALING MORE THAN 800,000 SQUARE FEET:

- Lighting improvements
- HVAC upgrades
- Energy management system
- El Paso Electric accounts—rate conversion
- Ongoing training programs

CONTRACT
VALUE

\$22.1
MILLION

CONTRACT
TERM

20
YEARS

PER YEAR IMPACT

INCREASE
UTILITY
REVENUES BY
APPROXIMATELY

\$450
THOUSAND

REDUCE
OPERATING
COSTS BY
MORE THAN

\$900
THOUSAND

GUARANTEED ENERGY SAVINGS

\$38.1
MILLION

OVER
20-YEAR
TERM

CONTRACT
VALUE

\$18.7
MILLION

CONTRACT
TERM

20
YEARS

PER YEAR IMPACT

REDUCE
OPERATING
COSTS BY
MORE THAN

\$1
MILLION

GUARANTEED ENERGY SAVINGS

\$28.4
MILLION

OVER
20-YEAR
TERM