CITY OF SHERIDAN DEPLOYS NEW AMI SYSTEM, RESULTING IN BIG LABOR SAVINGS & IMPROVED SYSTEM MAINTENANCE

Case Study

OVERVIEW

The City of Sheridan, Wyoming, sought to implement a turn-key AMI solution that would not only help achieve accurate meter reading and billing, but also enhance customer relations. The rollout of Mueller Mi.Net AMI system on more than 10,000 service connections resulted in an estimated 65% drop in labor hours previously spent on servicing water meters and an improved daily read of 99.6%.

INTRODUCTION

Located in the U.S. state of Wyoming, the City of Sheridan (the City) has a population of approximately 17,500 residents. Thwarted by aging meters installed almost 20 years ago, the City researched a smart meter system that would provide improved system reliability and future operational efficiencies. To achieve this goal, the City migrated from its existing AMR system to a more powerful and flexible Advanced Metering Infrastructure (AMI) system.

"One of the many things we want to achieve is to serve as an efficient unit that is equipped with the ability to carry out meter reading instantaneously at any time of the day, and be able to identify leaks in the system", said Ken Hirschman, Utility Maintenance Superintendent - for the City of Sheridan. *"We also wanted to upgrade to smart water meters that are less mechanical and with less moving parts – effectively enabling us to get rid of mechanical meters and not be stuck with a load of inventory and a meter rebuilding process,"* said Ken.

DOWNTOWN SHERIDAN

The City found the perfect solution in Mueller Systems' two-way Mi.Net® AMI network system for its functionality and cost-effectiveness, amongst other attributes needed to meet its goals.

The Mi.Net system is a communication network that fully automates the meter-reading-to billing process by linking meters in a single, highly efficient data network. This provides the backbone for advanced metering technology as well as sensors for continuous monitoring of the entire water distribution system.

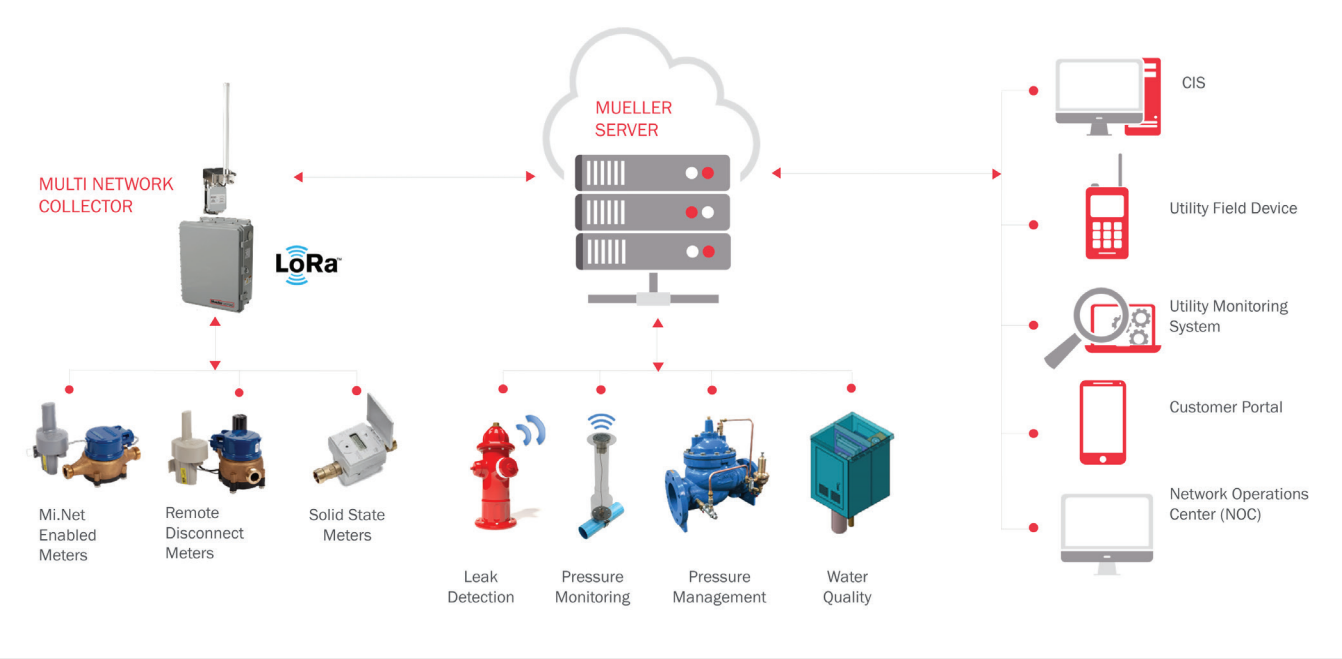
OPERATIONAL EFFICIENCY

The Mi.Net System has saved the City valuable labor hours, which are now deployed to other vital areas of their water and sewer systems. The City reports an average of 2,300 staff hours saved annually on meter reading, work orders, and turn offs. The utility maintenance team also calculated approximately 65% of their time saved on meter related work, as they can now get instantaneous reads without having to roll a vehicle.

Over time, the City's utility maintenance team transitioned its dedicated person for meter reading to an operational role where he can contribute to other parts of the water and sewer systems, not just meters. These additional staff hours allow the City to accomplish more important activities such as cleaning and flushing sewer mains saving the City an estimated $50,000 per year on sewer backup claims. Additionally, the City replaced six fire hydrants that resulted in increased system reliability on hydrants that were previously non-functioning or had low flow.

"We are able to serve our city and community much better than before. In a year, we saw our fire hydrant maintenance jump over 800 hours that we never were able to do; we had an extra 500 hours into sanitary sewer maintenance that was also unprecedented. Overall, our system maintenance has really improved. There have been less sewer plugs and claims against the city, and more time for replacing fire hydrants to safeguard our residents." Ken shared.

The Mi.Net system integrates with Mueller Systems remote disconnect meter (420RDM), which, by accessing the account information through the Mi.Net AMI user interface, allows meters to be turned on or off. The Mueller 420 RDM can be turned on or off from the office in under 18 seconds saving valuable labor hours.



MUELLER MI.NET SYSTEM ARCHITECTURE

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ON-DEMAND READ

The Mi.Net radio transmitter captures a read from each meter every hour. Each night, the node uploads all 24-hour reads to the Mi.Net servers, and into the City's user interface. Should utility staff need a read urgently, a reading may be requested on-demand; the reading is sent to the meter and read in real-time, feeding back to the operator within seconds.

"With Mi.Net AMI system, I can do a quick water audit at any time of the day. The meter reading tells me how much water we have metered that day. Subsequently, I can look at our SCADA system which has our water treatment plant discharge flow to make sure that they are fairly accurate," said Ken.

The Mi.Net system has allowed the customer service team to remedy the issue that was formerly in the hands of another City division. *"If there are readings that did not pull through during the billing process, or if a customer suspects a leak in their service line, we do not automatically need to roll out a maintenance truck to investigate. We are able to immediately access the readings and usages before and after the date in question and help identify what is needed. With information available at daily and even hourly intervals, we can offer customers fully substantiated information to help them know with confidence how their home systems are functioning," said Cathy Wright Bare, Customer Service Specialist* – for the City of Sheridan.

It is estimated the customer service team has been saving approximately 800 hours per year making use of the Mi.Net system's capabilities and efficiencies. This allows the members of the team to reallocate resources to other customer service endeavors.

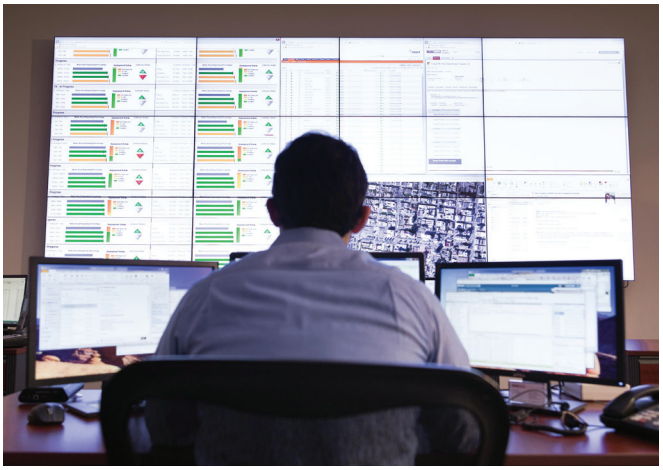
From a water conservation perspective, the ability to capture hourly and on-demand data allows issues such as unauthorized domestic water use and network leaks to be addressed in a timely manner. For the City, a reduction in wholesale water cost and energy required for pumping during production and distribution can be realized; for customers, the self-service functionality empowers them to track their usage pattern, identify leaks and maximize water consumption efficiency.

MUELLER SYSTEMS 420 RDM (REMOTE DISCONNECT METER) WITH SOLID STATE REGISTER AND LORAWAN CLASS B NODE

AROUND THE CLOCK SYSTEM MANAGEMENT

All Mi.Net Systems are continuously monitored by network engineers in a state-of-the-art Network Operations Center (NOC). The NOC employs software to analyze all communications and identify patterns, trends, and conditions allowing engineers to respond in real time and adjust remotely when required.

"The other great thing that we really liked about the Mi. Net system is the hosted option - they have the NOC which monitors our system as well as we do. If there is any issue, we do not have to have any extra personnel to manage that, NOC does it all. The team at Mueller Systems really demonstrates the willingness to be successful for this project and the community," Ken added.



MUELLER NETWORK OPERATIONS CENTER IN ATLANTA, GEORGIA

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SAFE AND RELIABLE

Whilst designing a solution for this deployment, Mueller Systems wanted to not only focus on helping the City maximize their investment in an AMI system by providing a true two-way network that allows upgrades, but also one of the most important factors – network security.

From end to end, the Mi.Net System provides multiple layers of security to prevent hacking, impersonation, and other network security threats. Security mechanisms and protocols are designed into the system to enable hosting of all software in a secure environment and providing round the clock monitoring.

Additionally, the Mi.Net system architecture employs LoRa™ based applications to establish a reliable and secure layer that can prevent accidental loss and/or interception of customer data. This provides unmatched accuracy, distance, bandwidth, throughput, and resistance to interference in the unlicensed ISM band between 902 and 928 MHz. The use of LoRa radio frequency modulation offers high-power transmissions and an increased range over traditional systems while having lower battery usage. The proof is in the numbers. Since deployment, Sheridan's Mi.Net System is averaging a 99.6% read rate percentage.

Mueller Systems continues to work alongside the City of Sheridan to empower them to do more with less and accelerate its journey in becoming a smart city of the future with the power of Mi.Net AMI system.

ABOUT MUELLER

Mueller (NYSE:MWA) is a leading manufacturer and marketer of products and services used in the transmission, distribution and measurement of water in North America. Our broad product and service portfolio includes engineered valves, fire hydrants, metering products and systems, leak detection and pipe condition assessment. We help municipalities increase operational efficiencies, improve customer service and prioritize capital spending.

For more information about us or to view our full line of water products, please visit www.muellerwp.com or call Mueller customer service at 800.423.1323.

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