



Badger Meter

City of Yakima upgrades to AMI system in order to boost efficiency, increase revenue, advance conservation efforts, and improve customer service

The city of Yakima services approximately 19,000 accounts within 27 square miles in the Yakima Valley. Frequent droughts, above average water loss and inaccurate meters prompted the city to search for a vendor who could provide a turnkey solution complete with a quality product line. The selected vendor also needed to have an endpoint that could withstand the extreme conditions experienced inside their meter pits including high humidity and varying temperatures.

After a successful pilot and an RFP, Badger Meter proved to be the solution the city needed with a fixed network Advanced Metering Infrastructure (AMI) system and BEACON® Advanced Metering Analytics (AMA) implementation. “During the [pilot], we were impressed with the equipment, communication with the representatives, and learned the future benefits of this system,” says David Brown, water/irrigation manager for the city of Yakima. “We knew it would help us achieve our long-term goals.”

Preparing for Installations

The city of Yakima had incorporated several variations of pits into their water system over the years, and a solution was required that could accommodate the variety of lids. The majority of the lids were not conducive to communication in a fixed network via radio frequencies. In order to enhance RF Propagation, Badger Meter procured a contractor to produce 19,000 composite lids that were custom-designed to accommodate the city of Yakima’s unique pit configurations. The new lids ensured that the gateways could effectively capture all of the reads.

A recent city ordinance had prevented the installation of new poles, which required all of the gateways to be installed on existing infrastructure. With the new ordinance in place, Badger Meter conducted a propagation study which showed that 20 gateways would sufficiently provide coverage and redundancy throughout the city’s service territory by utilizing existing infrastructure. Additionally, the state of Washington’s electrical code prevented use of equipment that was not labeled by Underwriter Laboratories, preventing the use of streetlight power taps. Badger Meter and its subcontractor were able to adhere to the code by coordinating efforts with the local power company and running power directly to each pole on which a gateway was to be mounted.

The city’s water system also included two dozen wastewater meters which required an electrician to pull permits and retrofit the wastewater devices. Many of those devices tied directly into companies’ own meter reading station which were used to monitor flow for various manufacturing processes. Therefore, it was imperative that the devices were programmed accurately



Overlooking the City of Yakima, WA

without affecting the existing system. Badger Meter’s engineers were there to ensure that the installation and programming of those devices was performed accurately and without any interruptions for the city’s customers.

More than just an AMI system

“As installations began, we realized that we were not just obtaining an AMI system; we were obtaining a partner that was there to help us meet and succeed on our objectives,” says Brown. Badger Meter made every effort to ensure that data was properly relayed to the city’s billing system, customers were kept informed about the project, and that installs were performed with quality workmanship. Immediately before shutting off any water, the customers were notified that they would receive a brief interruption in their water service.

After completion of the install, the customer received a door hanger that specified who to contact in case there were any questions or concerns. Calls were directed to the installation contractor which greatly reduced the burden on the city. Within 24 hours of an installation, meter reads could be seen populating the meter reading software. The city could then import the meter reads into their existing billing system.

Accuracy Pays

In addition to the new AMI system, the city of Yakima also invested in replacing their aging meters. “Many of our meters in the city were from the 1940s,” said Brown “We knew the ¾ to 1 ½ inch

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meters were probably under registering, but we had no idea how much they actually were." Larger meters were calibrated for accuracy, however, the older ones required very frequent monitoring and adjustment. After considering various meter products, the Recordall® Disc, Turbo, Compound, and Fire Assemblies Series meter lines were chosen for an accurate, cost-effective solution.

The Recordall meter line combines the accuracy of positive displacement meters with the reliability and economy of nutating disc technology; the simple but efficient design of this meter makes it an ideal solution for measuring flow. With new, more accurate meters beginning to be installed, the city immediately started capturing more revenue. "The meters are improving our [non-revenue water], so our sell vs. actual percentage is getting a lot better," says Brown.

Along with capturing more revenue, the city appreciates the ability to gather and analyze more granular measurement data. "It helps me generate better reports," says Brown. "The numbers are much more accurate and I'm looking forward to analyzing a full year's worth of information especially for accounts with no recent flow, back flows or any tampers."

With its long term, sustained accuracy, the Recordall meters will also help the city record flows at new meter accuracies throughout the life of the meter. Overall, Brown estimates that with the added revenue from more accurate metering and implementing automated meter reading, the system will pay for itself very quickly.

Enhanced customer service

By utilizing the BEACON AMA software suite, the city is able to easily access and manage exact, real-time data. This gives the city a troubleshooting tool for any customer complaints or maintenance issues.

"BEACON worked with our billing system and exceeded our expectations," said Brown. "It

improved our process, reduced errors, and made us more responsive to our customers." BEACON AMA offers an interface that is easy to use for both the utility and the consumer.

Because the city has access to accurate data that is collected continuously, it can easily point to specific occurrences on the customer's utility bill to help decipher where and how a discrepancy might have occurred. Customers can then work with the utility to fix any leaks or determine when their water use may have exceeded their expectations. This helps them to conserve water and lower their bill.

"Within a few weeks of implementation we had customers contacting us with leaks needing to be resolved," said Brown. "Before the EyeOnWater app, no one really paid attention, but now that they can see their usage they are becoming more and more aware." Because of the popularity and need, the city will be hiring a full-time person to work with customers on leak detection and the EyeOnWater app.

Continuous information leads conservation

For Yakima, frequent droughts have made conservation a new issue. The city realized it will face long-term water supply issues as the cost of producing potable water continues to increase. In order to keep costs down, the city knew it needed a solution that could communicate to customers how much water they were using and when they had leaks. When customers have instantaneous information and know how much water they use, they can make behavioral changes to help control long term water costs and conserve resources.

BEACON AMA gives consumers the ability to manage their usage themselves. It also enables the city to reach out to consumers during times of drought and meet its overall conservation goals. In the future, the city plans to utilize BEACON AMA to monitor water usage by pressure zone and customer class in order to pinpoint areas of concern and advance their conservation efforts even further.

Yakima Solution

- BEACON® Advanced Metering Analytics (AMA)
- Recordall® Disc Series Meters
- Recordall Turbo Series Meters
- Recordall Compound Series Meters
- Recordall Fire Series Assemblies Meters

Results

- Meter reading efficiency
- Added revenue generated by more accurate meters and time-saving solutions
 - Improved sell vs. actual percentage
- Improved billing process
- Enhanced customer service
 - Faster leak detection
 - More detailed usage information reduces billing disputes
 - Consumer engagement through the EyeOnWater smartphone/tablet app

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