



Badger Meter

BEACON® Advanced Metering Analytics (AMA) Managed Solution and District Metering Strategy Help Identify Major Leaks for Highway 71 Water District No. 1

A rural water district located between the Ozark and Ouachita Mountains in Alma, Arkansas, Highway 71 Water District No. 1, services approximately 2,500 water customers scattered across 175 miles of distribution lines throughout the countryside. The utility prides itself on providing safe, high-quality water to its community, while maintaining a standard of excellence in customer service and environmental conservation.

However, Highway 71 was facing challenges. The large service area and distance between meters made it difficult to detect leaks, resulting in high percentages of water loss. Highway 71 managers knew something had to be done.

Finding a Leak Detection Solution

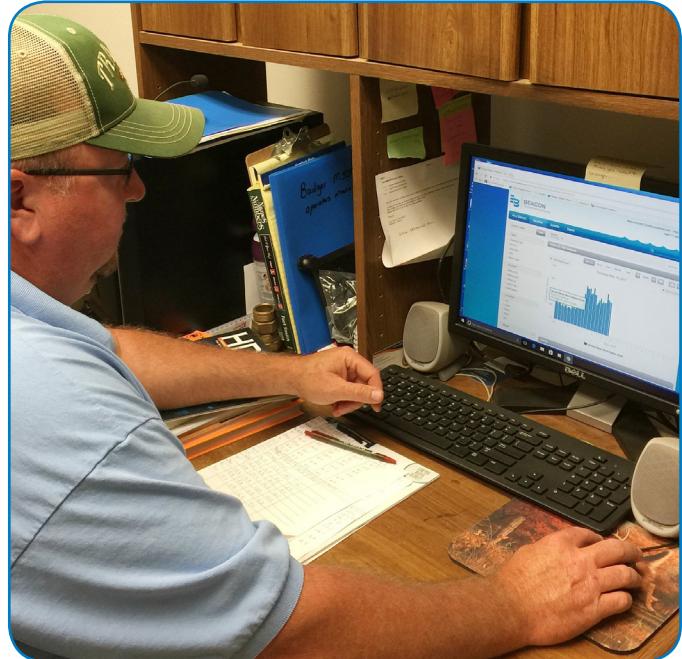
Working with its local metering distributor, Henard Utility Products, Highway 71 identified potential solutions. "The team at Highway 71 had tried several leak detection solutions in the past. When we introduced Badger Meter's BEACON® Advanced Metering Analytics (AMA) managed solution, they found the system that met their needs," said Mike Henard, owner of Henard Utility Products. "Highway 71 was already familiar with Badger Meter, having used the company's drive-by automatic meter reading technology, ORION® Classic (CE), for nearly 10 years. So, the utility knew Badger Meter would offer reliable and accurate water meters and meter reading systems."

BEACON AMA is a cloud-based software analytics platform that provides utilities with real-time actionable data to monitor and manage their water systems. Its first-in-the-market cellular network technology, ORION Cellular, was ideally suited for most of the Highway 71 installations. Because BEACON AMA is also compatible with fixed network and drive-by meter reading systems, it provided flexibility in deployment for those areas of the district that did not receive strong cellular signals. By implementing the BEACON AMA solution, Highway 71 employees were able to monitor meters from the office to identify areas with leaks, saving considerable time and money in obtaining meter readings across the large rural countryside.

Along with the decision to implement BEACON AMA to help identify leaks in its system, Highway 71 leaders also needed an effective way to further isolate the location of the leaks so they could be quickly fixed to reduce water loss.

Zoning for a Solution

"Because our system encompasses a large area of land, we decided to implement a zoning or district metering solution. By breaking down the system into ten zones, we were able to



BEACON® Advanced Metering Analytics (AMA)



ModMag® M-Series® with ORION Cellular

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Case Study

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isolate exactly where leaks were occurring," said Jesse McChristian Jr., manager of Highway 71. "When we combined the data-monitoring capabilities of BEACON AMA with our zoning strategy, we located leaks in just a few hours compared to the two or three days it had taken us in the past."

To target leaks within the water system, McChristian and his team at Highway 71 created a zoned district metering solution. In addition to the meters already on-site at each customer's property, Highway 71 added ten zone or "master district" meters from Badger Meter's ModMAG® M-Series® battery-powered mag meters. Like a tree trunk, the zone meters serve as the intermediary to the residential "branches" or meters. With the implementation of the district metering solution and BEACON AMA, Highway 71 was able to identify numerous leaks throughout its system, equaling approximately 125 gallons of water a minute. With the new solution in place, Highway 71 easily located the leaks and repaired the damage, saving the utility \$260,000 a year in non-revenue water purchased from its supplier.

"While we are still phasing in BEACON AMA – we currently have 227 units deployed on zone and residential meters – we are already seeing results. We've cut down on time spent reading meters and have cut our water loss in half," McChristian added. "In fact, the BEACON AMA solution has already paid for itself. We could not be happier."

Highway 71 customers have also started to use the EyeOnWater® mobile and tablet application that is part of BEACON AMA. When using the app, utility customers can see and understand their water use in real time, allowing them to take a hands-on approach to monitoring their water usage. The utility is saving time in responding to customer questions, and its customers now have greater control of their water consumption.

The BEACON AMA and district metering solutions have saved Highway 71 money, time and water. With increased revenue coming to the utility, Highway 71 was even able to hire a new full-time employee and is upgrading its meters.

New Meters

"The money we've saved identifying and repairing costly leaks in our system will now be used to upgrade our meters. We will be deploying Badger Meter's E-Series® Ultrasonic meters and High-Resolution Encoders (HR-E®). Our team liked that the E-Series meter has no moving parts and will be more accurate over time compared to mechanical meters. I trust that these meters will be reliable, accurate and will last," said McChristian.

Badger Meter's stainless steel E-Series Ultrasonic meters use solid-state technology in a compact, totally encapsulated, weatherproof, and UV-resistant housing and monitor consumption, rate of flow, reverse-flow indications, and alarms.

With these solutions in place, Highway 71 Water District No. 1 is well-equipped to offer its rural Arkansas customers safe, high-quality water and exceptional customer service for years to come.

Highway 71 Solution

- BEACON® Advanced Metering Analytics (AMA)
- ORION® Cellular endpoints
- EyeOnWater® smartphone/tablet app
- E-Series® Ultrasonic meters
- ModMAG® M-Series® mag meters

Results

- **Faster and more accurate leak detection**
 - Non-revenue water loss is tracked daily
 - System is easily deployed and flexible
- **Increased operational efficiency and cost savings**
 - Reduced truck rolls and employee costs generate cost savings
 - Savings enabled utility to hire new employee and replace older meters
- **Improved customer service**
 - Faster customer notification of leaks
 - Customers can easily see their water usage via smartphone or tablet
 - More detailed usage information enables the utility to proactively reach out to customers who may have an issue and quickly resolve billing questions

Making Water Visible®

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