



Smart Water Meters Overcome Mountainous Challenge at Bella Vista Property Owners Association

Bella Vista, a city located in the Ozark Mountains in the far northwest corner of Arkansas, is in a beautiful setting, with rolling hills and steep hollows. For the past 50 years, the area has also been a top retirement destination, with its amenities overseen by the Bella Vista Property Owners Association (Bella Vista POA). Along with managing the city's lakes, golf courses, swimming pools, trails, an RV park and campground and more, Bella Vista POA also oversees the city's water service to 30,000 customers across 36,000 acres.

Until 2014, the association obtained accurate water measurement and billing data through a drive-by automated meter reading (AMR) system. The system required three employees driving for miles to collect readings and generate billing across its system—a process that took 20 days to complete reading nearly 14,000 water meters each month.

Not only was it operationally burdensome due to inclement weather and challenging terrain, but the drive-by AMR system also created some customer service challenges and delayed water leak detection. As the association's population grew, reading meters across its system with drive-by AMR became even more difficult. The association sought a new approach to deliver better customer service and more accurate and scalable water meter reporting.

"Our previous drive-by reading system was reaching the end of its useful life and causing us difficulty in our monthly operations," said Charlie Holt, water operations manager for Bella Vista POA. "We wanted a more efficient way to read meters that would simplify our operations and give us real-time water consumption data."

A Cellular Solution Emerges

While Bella Vista POA initially wanted a fixed-network solution, its distributor, Henard Utility Products, understood the association's needs and shared the potential problems they could face. "A traditional fixed system with data collection would be very difficult to deploy because of the many hills and valleys throughout the region," said Mike Henard, president and CEO of Henard Utility Products. "When Badger Meter introduced its cellular solution to the market, we knew this was the perfect fit."

In 2014, Badger Meter released its original ORION® Cellular endpoints, which—when enabled through the BEACON® Advanced Metering Analytics (AMA) Software as a Service (SaaS) solution from Badger Meter—allow water utilities to remotely report water meter flow, provide timely water measurement readouts and reduce non-revenue water usage across vast geographical areas. By leveraging existing cellular networks, these solutions are not reliant on proprietary gateways and offer greater security through infrastructure-free fixed networks.

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Bella Vista Property Owners Association

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- **BEACON® Advanced Metering Analytics**
- **ORION® Cellular endpoints**
- **EyeOnWater® consumer engagement tool**
- **Recordall® Model 25 Disc Series meters**

Results

- **Enhanced operational efficiencies**
 - Cellular endpoints enable up-to-date reading across hard-to-access terrain
 - Without infrastructure to maintain, Bella Vista POA redirected three employees to customer service and other infrastructure projects
- **Greater water usage visibility**
 - Customers can regularly view their water consumption with EyeOnWater
 - Accurate billing based on consumption rather than unaccounted for water
- **Increased flexibility**
 - Bella Vista POA can add more endpoints as it grows, without the need to build new infrastructure
 - Cellular solution allows Bella Vista POA to evolve with the latest technology

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Upon hearing about this new solution, Bella Vista POA agreed to implement a two-year trial system, along with deploying 50 Badger Meter Recordall® Model 25 Disc Series meters. The pilot was a huge success, so Bella Vista POA decided to scale the system to its nearly 14,000 customers.

“Until the BEACON AMA software suite and ORION Cellular endpoints became available, drive-by AMR seemed to be our only practical, yet still problematic, solution. With the advanced smart water meter technology available through Badger Meter, we solved the topography challenge and redirected team resources to better serve customers,” shared Holt. “It was a game changer.”



ORION® Cellular Endpoint

Smart Water Meter Results

Bella Vista POA completed installation of the new system in February 2019, which included the next generation of cellular endpoints from Badger Meter, ORION Cellular endpoints. Since then, Bella Vista POA has had significant success and seen a positive impact on its operations and customer service. The association now has faster and more reliable leak detection, improved end-user water usage transparency, increased efficiency in meter reading and improved flexibility for its staff, who now have greater freedom to focus on customer issues or water system improvements.

“We are now able to read meters on a daily basis, and have the ability to view 15-minute interval consumption history,” added Holt. “Before the smart water meters, meter readings were only obtainable once per month. Currently, daily water meter reads are reporting with a 99.9% to 100% success rate.”

Customer-side water leaks is a concern, as about 2.5% of the 13,500 residents on average experience some type of water leak each month. But with the new system in place, Bella Vista POA's water department can detect and, more importantly, notify the customer within a timely manner. Being able to notify customers in a timelier manner has vastly improved our customer service, saving the customer money.

SMART WATER IS BADGER METER

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Empowering the Customer

As part of the BEACON AMA solution, Bella Vista POA also has access to the EyeOnWater® consumer engagement tool from Badger Meter. EyeOnWater, available on iOS and Android devices, gives the association's customers up-to-date visibility of their water consumption and encourages customers to be more accountable for their usage. So, as the Bella Vista POA water department monitors for leaks throughout its system, its water customers can simultaneously monitor for unexplained increases in their usage and notify the association.

“Between faster and more accurate leak detection and freeing up our staff resources, the smart water meters transformed our ability to provide excellent customer service across the association's challenging geographical landscape,” Holt said. “The sky is the limit with this technology and our newfound access to data, and we are confident it will enable us to provide excellent customer service far into the future.”

Bella Vista POA's water system is divided into 17 district-metered areas (DMAs). Before adding the new Badger Meter technology, the information from these DMAs were very limited, and not truly comparable since zone meters and customer meters were not able to be read on the same date. With BEACON AMA, Bella Vista now receives true water usage data for each zone.

DMAs can be monitored on a daily basis with up-to-date raw data as well as historical graphical representations that allows the user to watch for trends and changes from day to day.

“With this powerful tool, it allows us to more effectively direct our leak detection so that we are making the most out of our resources,” Holt said. “We had assumptions on where our worst areas were for unaccounted for water, but BEACON AMA has given us the ability to identify exactly what DMAs are seeing the worst water loss.”

Bella Vista's idyllic topography was once a pain point for the association's water department. But, with its smart water solution from Badger Meter, it no longer poses a challenge. Bella Vista POA is equipped to efficiently manage water across the area for years to come.