



Utility worker Josh Mayne installs a new 3-in. meter at a commercial site.



As part of the AMR upgrade in Coeur d'Alene, Idaho, Kyle Marine, crew utility supervisor, replaces one of the utility's 17,500 meter endpoints with a new meter and absolute digital encoder register.

# Perfect Pair

By Dan Merritt

Idaho city increases efficiency & revenue by integrating metering technology with software

While utilities have been implementing automatic meter reading (AMR) systems to streamline the meter reading process for years, advances in technology are making these systems even more attractive and valuable to utilities. Besides providing efficiency by reducing meter reading time, when combined with the right metering technology and software, AMR systems can provide data that boosts customer service, improves leak detection and helps utilities realize higher revenue.

For example, the city of Coeur d'Alene, Idaho, had been using a drive-by AMR system to read all of its meters since 2010, but it was not realizing the full benefits with its existing system, according to Rob Stark, utility supervisor for the City of Coeur d'Alene Water Department. The desire for increased savings, more accurate measurement and customer service improvements supported by more sophisticated data analysis and leak detection features spurred the city's quest for a new AMR partner.

## A More Reliable System

Because of disappointing quality and service issues with its existing system, AMR system performance, reliability and value were important

criteria in the selection process.

"We conducted thorough research before choosing a new vendor," Stark said. "That included spending lots of time with other utilities that have successfully implemented AMR systems to learn from them."

Ultimately, because of its strong track record, advanced features and reliable customer service, Coeur d'Alene selected a Badger Meter AMR solution. It includes Badger Meter Recordall meters with Absolute Digital Encoder (ADE) registers, along with Orion CE radio frequency endpoints. Additional components of the new system include a Panasonic Toughbook laptop for reading, Orion Trimble handheld computer and ReadCenter Data software. After changing out about 30% of its endpoints, Coeur d'Alene is already seeing benefits of improved efficiency and customer service as well as increased revenue.

## Simplified Installation

In 2011, Coeur d'Alene began installing the new system and within five months it had replaced 5,000 of its 17,500 endpoints. It plans to replace the remaining 12,500 endpoints over the next eight years as they reach the end of their respective expected product life spans. Stark said the process was much easier than the previous changeover.

"The installation was a breeze because we didn't have to program the meters," Stark said. "They were pre-programmed to our specifications at the factory, which saved us time. Plus, we have had virtually no issues with the new system and we have experienced a less than 1% failure rate. We are thrilled to have a quality solution that performs better and helps us realize our efficiency, revenue and customer service goals."

The new AMR system components work together seamlessly with Coeur d'Alene's existing system, too. "The ReadCenter software integrates easily with the city-wide enterprise software that the water department uses for billing," Stark said.

Stark has taken helpful training sessions sponsored by Badger Meter and appreciates the ongoing support. "When we attended the company's meter training class last year, I was impressed with the innovations they demonstrated," Stark said, "as well as the fact that most of their products are made in the U.S."

Prior to implementing an AMR solution, reading the city's 17,500 endpoints took two meter readers about 60 days, so meters were read only every other month. With the new AMR solution,

## About the City of Coeur d'Alene Water Department

At one time, the city of Coeur d'Alene drew its water from Lake Coeur d'Alene. Today, it obtains water from the Rathdrum Prairie Aquifer, an underground river that is between 150 and 280 ft below the surface. The aquifer begins at Pend Oreille Lake and flows southwest to Spokane, Wash. The aquifer's boundaries are the foothills that define the flat prairie land between these two points. It is a very pure source of water that requires minimal treatment.

The goal of the City of Coeur d'Alene Water Department is to provide tasty and healthy water at a reasonable price, at consistent pressures and in sufficient quantities. It operates nine wells that can pump up to 37 million gal per day (mgd) and it has storage capacity of about 6 million gal. On average, winter demand is 7 mgd. Peak summer demand is between 30 and 35 mgd. The number of wells operating is demand dependent. There are 19 full-time employees at the water department.

The photo above features the city of Coeur d'Alene Water Department staff, including Rob Stark, utility supervisor (back row, second from right).





it takes one person only three days to read the meters for the entire city. The enhanced data collection process provides more timely, detailed information, which makes it possible to bill monthly. In addition, the significant reduction in meter reading time has helped the city realize substantial cost savings. Because the city needs fewer meter readers, when two of the readers recently retired, there was no need to replace them.

“The Badger Meter system is truly a drive-by AMR system with continual broadcasting,” Stark said. “It’s much faster, and we don’t have to go out on as many service calls anymore. The number of customer complaints we receive has decreased significantly.” Because the new system provides more precise and timely information, it facilitates better customer relations.

### Improving Customer Service

The data analysis capabilities of the new system enable the water department to graph specific customer water usage. When a monthly reading cycle is completed, the reading data is compared with data from the same period during the previous year and the system flags accounts with unusually high use. This signals a potential leak, so city personnel can go out and check the meter to determine if there is a problem. If a leak is suspected, they can advise the customer, so the customer can take appropriate

action to make repairs.

“Data profiling and leak detection were not available on the previous AMR system we used,” Stark said. “With the new system reports, we pretty much know when there is a leak, and we can address the issue.”

The ability to provide more specific, accurate consumption data to customers results in better communications and fewer disputes over billing. When questions do arise, the detailed information helps to appropriately inform customers of usage. In addition, the city’s customers appreciate the rapid notification of potential leaks to reduce the real water loss and related costs.

### Commercial Metering Solutions

For commercial metering at hotels, schools and other public buildings, Coeur d’Alene is replacing its existing meters with Recordall Compound Series meters to better capture low flow and reduce apparent water loss. Ideal for facilities that experience rapid and wide fluctuations in water demand, the meters combine two technologies within one package. A positive displacement chamber measures low flow, while a turbine chamber records high flow.

Stark says Coeur d’Alene is realizing increased revenue using the Compound Series meters because the new meters are more accurate than their predecessors. So far, the city has installed 20 of the

Compound Series meters, and it plans to install 10 more by the end of this year. Preliminary metrics show on average that these new meters are capturing a 25% increase in consumption, with one location experiencing an increase of more than 155%.

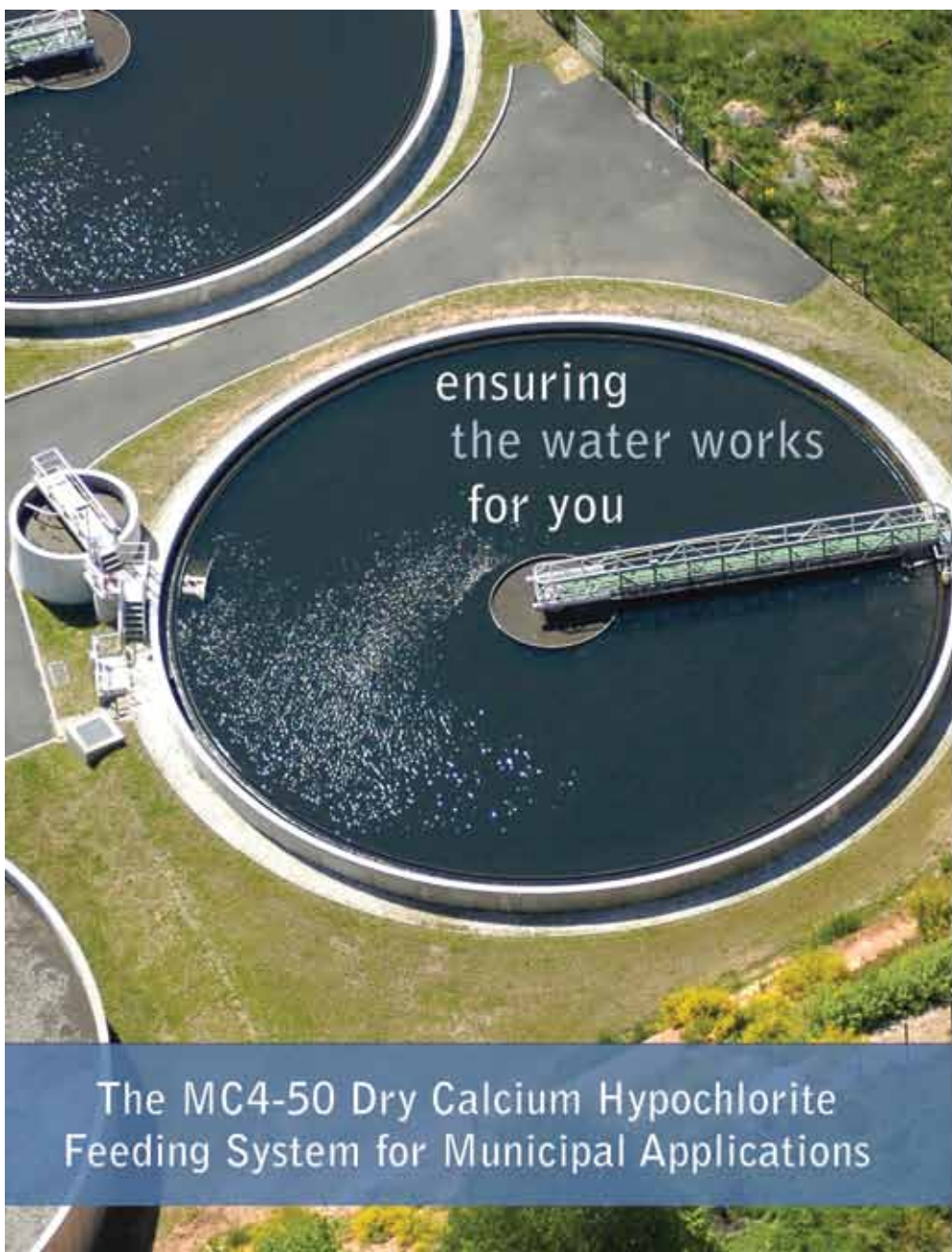
### Efficiency & Effectiveness

By pairing the right metering technology with the right software, the city of Coeur d’Alene is optimizing its AMR system for maximum efficiency and effectiveness. It is helping the city reduce real and apparent water losses, while enabling more timely billing and proactive communications to alert customers about higher-than-normal water use and potential leaks.

“Overall, we’re seeing increased revenue, reduced water loss, improved reliability, better efficiency and cost savings with the new system,” Stark said. “We have received fantastic customer support from Badger Meter personnel and we appreciate the company’s willingness to work with us to find solutions to our existing challenges.” **WWD**

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