

CASE STUDY:

AMR IN WILLMAR, MINNESOTA – THE FIX FOR A GROWING PROBLEM

By Scott Durham

The meter-reading workload in Willmar, Minnesota, has doubled over the past five years. The trouble is, growth in the city's meter-reading staff hasn't kept pace.

Like many budget-crunched municipalities, Willmar couldn't add meter readers fast enough to keep up with explosive development. That meant workers from other departments had to pitch in, leaving other tasks delayed or undone. "We knew we had to shorten our meter-reading time so we could cope with current tasks and plan for continued expansion without hiring additional readers," says Larry Heinan, Willmar's customer service supervisor. Every month, "meter-reading staff risked not getting the meters read."

Domino Effect

Overworked meter readers are just the beginning of a utility manager's headaches when growth exceeds hiring capacity. Hurried readers are more likely to make reading errors, which increase the number of billing related customer calls. Injuries are more common among overloaded workers, as well. Job satisfaction drops, too. Rapid employee turnover soon follows.

Willmar Municipal Utilities was battling all of these problems. Located approximately 100 miles west of Minneapolis, Willmar is home to nearly 19,000 residents and currently holds the record as Minnesota's fastest-growing non-metropolitan area. Faced with continuing municipal expansion, utility managers knew they had to find a better way to get the city's water and electric meters read. The solution came in the form of an automatic meter reading (AMR) system.

"Like most organizations today, municipalities are under constant pressure to be more productive," says Ken Kercher, president and CEO of Datamatic. "Along with cutting meter-reading costs, AMR can improve reading accuracy, decrease the number of re-reads a utility performs and help call-center representatives resolve billing complaints."

According to Kercher, AMR is more than a way to meet rising demands with limited budgets. "It's a strategic investment that can help any utility work smarter and more efficiently."

Combo Complications

Choosing the right meter-reading system can be especially tough for combination utilities that offer multiple commodities to customers, as Willmar does. This was especially true back in early 2000, when the utility's managers first began evaluating AMR. Their challenge: finding a cost-effective way to read 3,300 electric meter and 2,400 water service endpoints.

"At that time, you couldn't read water meters over the power line like you could with electric meters," Willmar's Heinan says. "We had a difficult time finding a uniform system to read meters for both commodities."

What's more, Heinan had a wish list for his AMR system. For one thing, the technology had to tackle safety issues. Along with the usual slips, trips and falls, dog bites had become a problem for this small-town and semi-rural utility. Harsh winter weather was a consideration, also. Heinan and his team wanted an AMR system that would keep readers from risky and time-consuming hikes — or drives — through snow and cold to get the monthly meter reads.

In addition, Willmar officials also wanted access to daily consumption profiles so that they could provide customers with information about unexpected usage and surprisingly high bills. However, frequent-interval data is generally associated with fixed-network AMR solutions, which have additional costs.

Plus, the utility department wanted an AMR system to be affordable, scalable, easy to install and, most of all, adaptable to any water or electric meter. "Ultimately, we chose the system that worked best with our existing ERC water meters, which have an unusual wiring design," Heinan recalls. He adds that utility workers evaluated several systems before selecting Datamatic to handle the job.

Meter Reads and More

In 2001, Willmar's metering team began installing Datamatic's FIREFLY meter interface units or MIUs in hard-to-access areas on the outskirts of town and at homes known to have aggressive dogs. Eventually, FIREFLY MIUs went on all of Willmar's residential-route meters.

Willmar officials opted to use Datamatic's drive-by technology. Through it, meter readers carry receivers in their vehicles, and as the vehicle passes each MIU, the receiver intercepts and records radio frequency transmissions of meter reading data.

What sets the FIREFLY units apart from ordinary drive-by AMR is ProfilePLUS Usage Profiling for water, electric or gas consumption. All FIREFLY units archive consumption at user-defined intervals. Set the ProfilePLUS to record data every 60 minutes, and the unit can store and deliver water consumption for more than 74 days. FIREFLY units for electric meters can record 15-minute interval data for more than 169 days.

FIREFLY units and ProfilePLUS data logs inside them deliver the interval data usually associated with fixed-network AMR, but Datamatic's solution doesn't have that high fixed-network price tag. Still, with the ProfilePLUS data, utility managers can generate detailed reports, graphs and consumption timelines, which lend themselves to dozens of customer-oriented uses.

For example, Heinan hopes to be able to provide projected energy costs for new-home buyers based on the average consumption of current area customers. The data has proven useful in the call center, too. "We had a concerned homeowner with a high electric bill," Heinan says. "Using ProfilePLUS, we were able to pinpoint the usage and found that much of the energy was being drained by the new home's heated garage. The customer didn't realize how much it was costing them to keep the garage warm during the winter."

In addition, Willmar staffers are investigating ways to use the profiling system for conservation. "ProfilePLUS can show customers their pattern of water usage over a period of weeks," Datamatic's Kercher says. "It also can demonstrate overall monthly consumption, as well as how usage was distributed throughout the day." By showing detailed reports of usage, the utility can help customers make better decisions about their energy and water use.

On the electric side, ProfilePLUS gives utilities the power to offer time-sensitive rates. By charging more for peak hours or critical peak days, utilities may be able to incite consumers to shift usage to off-peak hours, thereby easing demands on the electric grid.

Plus, interval data is useful to utility engineers who are trying to properly size transformers or plan future asset investments. And, of course, the AMR system is a smart investment, itself. The Willmar team can tell you how quickly AMR pays off.

Smart Savings

Like most utilities, Willmar has seen big savings in meter-reading labor costs. Employees can gather data from 70 meters in an hour using the AMR mobile unit. Reading the same route manually used to take up an entire day. Such time savings means Willmar utilities can keep up with growth without adding additional staff.

In fact, utility managers have been able to redeploy staff to pressing tasks such as installing meters on all of the town's new construction sites. "Our small size requires everyone to wear a lot of different hats," Heinan says. "Now, our meter readers are able to fill-in where needed. They can substitute for sick employees or address emergencies like a main break."

Another plus: "Municipalities that embrace AMR typically enjoy an immediate improvement in their revenue stream by correcting inaccurate or infrequent meter reads," Kercher says. This has certainly been the case in Willmar where Heinan says exception reports are now smaller, which means fewer re-reads and special truck rolls to get them done. "And, our department is far more accurate," Heinan adds. "We don't have to worry that a meter reader keyed in the wrong reading."

Other savings come from ancillary costs related to meter-reading functions. The city has been able to cut the number of fleet vehicles, reduce equipment needs, lower costs for supplies and insurance, slash call-center volume and, therefore, trim call-center costs.

"Our department has been able to show utility managers that we are productive and efficient," Heinan says. "We knew AMR would work," he adds, "we just needed to find the right vendor."

For more information about Datamatic AMR systems and products, visit www.datamatic.com or call (800) 880-2878.

About the Author:

As Vice President of Sales, Scott Durham has been responsible for Datamatic's successful marketing and customer acquisition activities for the past five years. His background includes market research, sales management, analysis, operations and business planning/strategy. With a degree in mechanical engineering, he is equally adept with the technical aspects of integrated and automated systems.