Columbus Water Works

Sharing Consumption Information with Customers to Reduce Leaks, Usage, and Bills

SPLIT BILLS AND LOST WATER LEAD TO A MAJOR METER CHANGEOUT

For Senior Vice President of Finance Joey Murphy and the rest of the team at Columbus Water Works (CWW), it all comes down to customer service. Like most utilities during the 1960s and 1970s, the Columbus, Georgia utility had read its meters and billed its water customers quarterly. In the 1980s, the read-to-bill cycle was reduced to every other month. In 1996, after surveys and focus groups showed heavy interest among customers to receive and pay their water bills monthly, CWW hired a third-party contractor to read one-half of the system, while inhouse staff would handle the reading for the other half of the routes. All 65,000 or so reads were taken from meters manually.

Unfortunately, the contractor's performance did not meet expectations, and by 1998, CWW had to abandon monthly reading. However, because customers had come to expect the reliability of monthly bills, the utility was determined not to disappoint them by returning to a bi-monthly billing cycle. First, CWW implemented a pilot for touchpad reading of all its commercial and industrial (C&I) accounts. Second, billing would now be handled differently – 60 days' worth of billing would be split equally, one-half for the month the reading was taken and one-half for the following month.

While this allowed for monthly billing without increasing staff, Murphy said that CWW faced a dilemma. "This way of billing was difficult for our customers to understand, especially when you consider the transition of seasons – for example, they'd be potentially paying for their summer usage 60 days after summer. It was difficult to explain, and hard on our customer service representatives."

CUSTOMER
Columbus Water Works,
Columbus, Georgia

SERVICE TERRITORY
The Columbus area includes Fort Benning and parts of Harris and Talbot Counties.

SOLUTION BENEFITS
Reading cycle now 15 days with true monthly bill for all customers

Analyzing consumption activity and sharing the data with customers to help curb excessive usage, identify leaks earlier

Migration from mobile AMR to fixed network AMI is enabled without the need to replace meters or radios

The lag time also meant that leaks might go undetected for up to two months. "If they did have a leak, we wouldn't know when it started, and wouldn't know about the [situation] for a long time – with a lot of wasted water [as a result]," Murphy added.

NEPTUNE® MOBILE AMR MEANS MORE READS PER MINUTE – AND MONTH

In early 2003, CWW began an update to its meter change-out program. After analyzing the length of time between reads along a handful of routes in the "panhandle" of Muscogee County, CWW implemented another pilot. This time, Murphy and his team would measure the impact of automatic meter reading (AMR) for accounts on larger lots that had been read manually before. The results showed that manual walk-by reading yielded 1.3 reads every minute versus at least 4.6 per minute using a radio-frequency (RF) handheld unit. Knowing that even that figure would be artificially low compared to normal routes in more densely-populated areas, CWW used a baseline of 5.5 meter readings per minute to investigate the possibility of a system-wide change-out. After moving forward with the adoption of the Neptune® R900® RF technology to transmit readings from the E-CODER® solid state encoder register, the 5.5 figure has shown to be low. According to Murphy, "The Neptune R900 using a handheld gives us eight reads a minute on average, and that's getting better every day."

The move toward AMR would coincide with the installation of Neptune meters capable of registering backflow conditions, to meet changes in state law regarding backflow prevention. Since June 2005, CWW has instituted a proactive campaign to communicate to customers the need to detect and prevent backflow, starting with certified letters and including door-to-door visits prior to performing a meter changeout. The utility has even offered devices to alleviate thermal expansions that could cause backflows and damage customers' pipes.

The installations of backflow-detecting meters and R900 MIUs proceeded at a pace of roughly 4,000 per year as part of a route-based changeout. From the beginning, said Murphy, "We automatically saw the benefit of that."

In 2011 Murphy and his team accelerated the project to nearly 6,000 per year, looking to add monthly reading capabilities as well as true monthly billing. Also, since 2011 all new meters installed have been capable of being read using R900 technology. Since 2012, Columbus Water Works has implemented the Neptune integrated E-CODER®)R900*i*™ combination encoder/MIU. The billing cycle continued to accelerate with the upgrade to the MRX920™ mobile data collector in 2014. "With it, we can pick up reads three streets away," Murphy said. "On a recent scan we picked up 1,700 reads in just a two-mile drive." He also anticipates revving up the utility's reads-per-minute to the double-digit range. With the ability to read up to 72 meters per second with the mobile data collector, the only real constraints to improved reading efficiency are the density of the routes and the legal driving speed.

READING EVERY METER EVERY MONTH INHOUSE, THEN SHARING THE DATA WITH HOMEOWNERS

After analysis to determine how many meter readings could be captured in a single month using current staffing levels, by the end of 2014 Murphy's team had found the "sweet spot". In January 2015, upon achieving a 51 percent AMR-capable saturation of the meter population, the utility had enough RF coverage among its routes to produce a true monthly bill for all its customers. And by May 2015, CWW had reduced its reading cycle to 15 days, marking the first time in nearly 20 years that it had read all the system's meters in one month – and the first time ever to do so completely inhouse, without adding staff.

The improvements to customer service haven't ended there. The consumption activity history capabilities of the R900 System have enabled CWW to share consumption data with customers, helping curb excessive usage while

identifying continuous leaks much earlier than before. C&I customers now have the opportunity to see their consumption patterns correlated with production runs, maintenance activities, and more. "It's allowed us to be more proactive, to use data to notify customers of issues without them having to request that information," said Murphy. "And by showing them on graphs, they understand. It helps them avoid any surprises."

"Customers today have higher expectations," Murphy said, adding that to go beyond basic reading and billing, "we're positioning to provide what they want, including budget billing, instantaneous consumption information, and remote connects, disconnects, move-ins and move-outs." As of this writing, Columbus Water Works is investigating possible pilot areas for targeted fixed network data collection via the Neptune R900® Gateway.

Murphy cited the importance of the R900 System's migratability to CWW's plans moving forward. "With so many changes in technology, and for us to implement a multi-year project, we had to know what went in today would work down the line. It was important to have a seamless transition."

Columbus Water Works has six ongoing strategic initiatives, and Murphy is happy to point out that its changeout program to the Neptune R900 System has applied directly to three of them – maintaining financial stability, optimizing infrastructure performance, and of course, enhancing customer satisfaction.

"It's allowed us to be more proactive, to use data to notify customers of issues without them having to request that information. And by showing them on graphs, they understand. It helps them avoid any surprises." - Joey Murphy, Senior Vice President of Finance, Columbus Water Works

NEPTUNE TECHNOLOGY GROUP

#winyourday
neptunetg.com

Neptune Technology Group
1600 Alabama Highway 229
Tallassee, AL 36078
800-633-8754 f 334-283-7293