



Municipal Authority of Westmoreland County

Neptune's R900® RF Technology Sets Walk-by Meter Readers on Easy Path to Migration

THE MOVE TO AMR STARTS WITH A RADIO CONTEST

Located in the picturesque southwest corner of the state, Westmoreland County was the Pennsylvania colony's first county west of the Allegheny Mountains. The area boasts golf legend Arnold Palmer and television personality Fred (Mister) Rogers among its native sons, and is currently home to a population of roughly 363,000. It's also the home of the Municipal Authority of Westmoreland County, which provides water services to 125,000 accounts in five counties covering an area of more than 1,000 square miles. Nearly 95 percent of the served customer base is residential.

When Assistant Manager Tom Ceraso first joined the Authority in 1986, water meters were read using a dialed system where homeowners called in with their readings. From there, Westmoreland County adopted a touchpad reading system. For decades, necessity dictated a piecemeal approach to installing meters, leading to an eclectic hodge-podge of models from different manufacturers. By 2011, Tom – who had returned to the Authority after 11 years – decided to move the team toward a radio frequency (RF)-based reading system. After sending out a Request For Proposals, Westmoreland conducted a unique pilot study; it would assign different reading routes to five different metering companies, including Neptune Technology Group. Beginning in summer 2011, the Authority looked at each competitor's walk-by/drive-by RF system according to 1) compatibility with a mixed meter population, 2) the ability to collect readings quickly and accurately, and 3) ease of transferring data to existing billing software.



CUSTOMER

Municipal Authority of Westmoreland
County, Pennsylvania

SERVICE TERRITORY

MAWC serves 120,000 drinking water
customers in a five-county region, and
25,000 wastewater customers.

SOLUTION BENEFITS

Saving time and labor during
installation of the E-CODER®)R900/™
wireless, integrated encoder and MIU

R900® handles hard-to-read meters
as well as typical installations

Reading 2x as much in same amount
of time for selected routes

Looking to consolidate metering
routes as well as reading positions

Authority can now compare
production vs. billed water to quickly
identify Non-Revenue Water

“The metering software had to be able to upload readings to our ‘homegrown’ billing system that we didn’t want to have to change,” said Ceraso. “We tested monthly meter routes for our larger commercial meters, integrating each competitor’s live reads and then moving those reads into each competitor’s own software.” The water metering companies went through a trial-by-fire when the Authority actually billed from their differing systems, simultaneously, for a period of three to four months.

NEPTUNE’S EASE OF INTEGRATION IS INTEGRAL TO SUCCESS

In short order, Neptune® N_SIGHT® software rose to the top of the “want” list. “Our IT people liked the ease of Neptune’s software and its seamless integration with our billing system,” said Ceraso. He added that its process required fewer steps and checks to maintain the integrity of the data than the other brands – and, unlike some other software packages, Neptune’s never lost the data in the transfer.

Another key factor in the Authority’s decision would be ease of installation. “We have 14 full-time personnel who read on a daily basis, as well as some who fill in,” Ceraso said. “Whatever meters and equipment we would install, it all had to be simple, and it had to work with all other manufacturers’ equipment already in the field.”

Neptune offered a solution that met the need for integration in more ways than one. As part of an overall R900® System, the E-CODER®)R900i™ combines a solid state absolute encoder register with an RF meter interface unit (MIU) into one wireless package. “With the integrated encoder and MIU, there’s no having to fit a transmitter on the outside of the property, no wiring to worry about. It saves so much time,” Ceraso added. “We’ve had 10,000 to 11,000 accounts where we’ve never been able to read from outside. Now we can install the same unit for these customers as for any other customers – and Neptune was the only company to offer this.”

CONSOLIDATING ROUTES AND POSITIONS

In April 2012, Westmoreland County entered into a purchase agreement with Neptune through distributor EAP Industries, Inc. Working with Neptune Territory Manager Bob Scheidemantel and EAP’s Sharon DelSignore and Russ Cipriani, the Authority began its large meter

changeout portion of the project. With funding in place, Ceraso and his team began the residential implementation in March 2013, with plans to stage it out as time permits. “It’s been a smooth transition,” he said. “EAP has had the meters we needed in stock, with never a shortage. They’ve also provided training for our staff on how to read using our new RF handheld devices. Everyone, including our fill-in readers, has had no problem with the new equipment; and we’ve yet to lose a read.”

Because the majority of meters in the system are still manually read at the time of this writing, the Authority continues with a walk-by reading program. However, it’s already seeing the difference Neptune’s R900 RF technology makes. For instance, even with the mix of traditional and AMR reading, the Authority doesn’t need to operate two parallel reading systems. “Our Neptune system reads all the meters in our books (routes) without any reorganization or renumbering. It equally handles our keyed reads while automatically grabbing the RF reads.”

That ability to literally pull reads out of the air is already saving Westmoreland County time and labor. Depending on the saturation of RF-outfitted encoders, meter readers can now read twice as much in the same amount of time for selected routes. Based on this accelerated data collection, Ceraso said, “We’re only months into our new residential reading system, and we’re looking at consolidating certain books.”

On a related note, Ceraso pointed to another eventual goal of the changeout: “We’re also looking at downsizing reading positions and reallocating those personnel to other departments where they’re needed – possibly as meter installers.” This would relieve the County Authority of the cost of hiring new workers while at the same time preserving jobs and maximizing resources.

DATA LOGGING SOLVES MYSTERIES WITH CONSUMPTION HISTORY

Another benefit of the Authority’s R900 System is proof of a customer’s water consumption through data logging. “We’ve had customers who’ve questioned the accuracy of their bill, and this is a great tool to show them that history; to say, ‘Look at this chart, you’re constantly using this much water...’ Sometimes, a customer will want their old meter tested for accuracy. Now, we can remove the meter

and then put on an E-CODER)R900i unit temporarily. We can log the short-term history over a couple of days and, with the time-stamped data, we can even find leaks early. We've never had data logging before; but, as we build the system out, it's something we're going to use more and more."

In one case, the Authority provided data logging information for the meter of a customer who'd had issues with historically high water consumption. The cause was quickly discovered – and proved through usage graphs – a leaking commode in a never-used pool house on the property. A years-long problem had been solved in a single day with historic data.

FLEXIBLE, FUNCTIONAL, AND FULLY FUTURE-READY

Ceraso is enthusiastic about the R900 System's flexibility in terms of both migration and function. Currently, the Authority is investigating the placement of an R900® Gateway fixed network data collector within a borough containing a large number of RF-equipped encoder registers. He also mentioned how targeted fixed network data collection would be ideal for hard-to-access accounts, such as gated commercial and industrial customers. In all these applications, the meters, encoders, RF MIU technology, and N_SIGHT host software remain the same, allowing for a seamless transition.

The R900 System is proving its versatility with regard to functionality, too. "We have pressure zones because we have a lot of hilly areas here," said Ceraso. "We also have demand areas where we want to look at how much water we're pumping compared to what we're billing. We're starting to coordinate changeouts in these places for RF saturation, so that we can drive in and discover Non-Revenue Water in a short period of time instead of every 90 days."

In a matter of mere months, the Municipal Authority of Westmoreland County has gone from walking manual routes to running an RF-based metering system that allows it to go far beyond basic meter reading and billing. Ceraso likes what he has seen and anticipates even more benefits in the future: "The installation of Neptune's R900 technology will have a spin-off effect throughout every department across the Authority because of the efficiencies it's going to create."

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