

# BOROUGH OF MIDDLETOWN

MIDDLETOWN, PENNSYLVANIA



## HIGHLIGHTS

- Full fixed network AMI – 2,600 R900® RF MIUs and E-Coder® solid state absolute encoders
- 100% accurate meter readings
- Improved efficiency – annual labor reduced from 2,000 to 48 man-hours
- 10% reduction in Non-Revenue Water
- \$250,000 annual increase in revenue
- 4-year payback on the project
- Proactive customer service – daily notification of customer leaks, reverse flow, and days of no flow



## AMI Expansion – Utility Takes R900® System Further without Moving an Inch

### Fast Forward to Full Fixed

According to Utility Operations and Maintenance Supervisor Kenneth Klinepeter, October 2004 marked the beginning of the Borough of Middletown, Pennsylvania's move from the "dark ages to the 21st Century" of meter reading. That's when it said goodbye to antiquated visual walk-by reads and, working with Neptune distributor EAP Industries, Inc., began implementation of the Neptune R900® System it had selected – including E-Coder® solid state absolute encoders, R900® radio frequency meter interface units (RF MIUs), R900® Gateway fixed network data collectors, and N\_SIGHT™ R900® host software.

By June 2005, the Borough's Utility Operations and Maintenance Department had a complete fixed network in place to serve a population of 9,254, with 2,592 residential, 86 commercial, and 27 industrial accounts – as well as nearly 1,700 people in neighboring communities. Initially, Klinepeter used ten collectors. With the introduction of the second version of the Gateway in 2009, the number of collectors was reduced to just four.

The results transformed operations. Middletown reduced Non-Revenue Water by almost 10 percent, reduced man-hours needed to read its system from nearly 2,000 a year to 48, and – most impressive – achieved a \$250,000 increase in revenue from combined water and sewerage services. The entire project paid for itself in just four years.

### And Then There Were Two – Half the Gateways, All the Reads

In July 2012, two years after Neptune's last case study profile of Middletown, the Borough again called on Sharon Del Signore and her team at EAP Industries to replace its four collectors with just two, installing the third version of the R900 Gateway data collectors in two of the same, more central locations.

And what has changed? "Not much," said Klinepeter. "And that's a *good* thing, as our system was working very well before. However, immediately after installing the Gateway v3, we saw we were getting the same number of reads and same consistency with half the number of Gateways, and no drop-off in percentage."

One collector stands atop a water tank at over 90 feet, but the other operates on the roof of the finance office building at just 30 feet above the ground – and still collects approximately 50 percent more readings than the prior version of the Gateway at that location. “The new Gateway v3 is doing a better job at a lower elevation than its predecessor,” Klinepeter said.

In addition to the added range of each Gateway v3 and the ability to get more accurate data more often, Klinepeter is impressed with a new feature – the version 3’s UPS (uninterruptible power supply), which provides a backup power supply and preserves data in the event of a temporary power outage. “We had a big storm that hit the middle of town and power was out for two hours – but we didn’t lose anything. The UPS did its job.” Leaving the Gateways to do their work has led to a unique challenge. “We perform re-reads with the handheld so infrequently that, when we *have* sent someone out to check a read that looks abnormally high or a possible stopped meter, they’ve forgotten how to operate the handheld,” he laughed. “It’s a testament to how reliable the system has been.”

### **N\_SIGHT™ R900® – Smaller Changes for the Bigger Picture**

He is also pleased with the reliability and performance of N\_SIGHT R900 host software. “Neptune has allowed us to see more data without changing the structure of the software,” Klinepeter said. “The system health is more detailed and, with its dashboard display, we can view the number of reads from each Gateway as well as the number of MIUs that might not be getting a read due to a cut wire or other event. We can also catch a reverse flow or a continuous leak without having to go looking for it or run a report to see it. It’s really operator-friendly.”

Another enhancement in N\_SIGHT R900 host software that he is especially enthusiastic about is the ability to customize date ranges on the calendar. “Now, say, when a business customer calls and wants to know its water consumption for the month, we can actually provide the

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– Kenneth Klinepeter, Utility Operations and Maintenance Supervisor

data for the *month* – instead of the billing cycle which starts in one month and ends in the next. It’s really nice for customer service.” The latest version of N\_SIGHT R900 also gives Middletown the ability to easily change a meter’s multiplier in the software to be able to show the consumption down to a tenth of a gallon, “for larger water service, if we wanted to go from a three-quarter-inch to a one-and-a-half-inch meter, for example. An operator could make the update in the software without having to call someone from the billing department to make a change in the billing system.”

### **Sticking With What Works – Extremely Well**

Still, what Klinepeter likes most about Middletown’s R900 System is what *hasn’t* changed. The reading and billing efficiency. The allocation of fewer man-hours to meter reading. And the contributions to proactive customer service. “We continue to see

leaks and notify customers before they have a chance to know about them,” he said. “Recently, we noticed high consumption for one account. When we went by the house, it turned out that the residents went on vacation leaving a garden hose running with water ponding in the backyard. We were able to just turn the water off.”

Continuing to build on the same Neptune AMI system is also a huge plus, as the Borough still uses the same meters, encoders, and MIUs that it installed seven years ago. “Once you have what works really well, you don’t want to throw it out,” said Klinepeter. “And when we’ve had improvements, there have been no disruptions in our operations. We don’t have to totally relearn things when a new version comes out.”

“Oh, and there’s another nice thing that hasn’t changed,” he added. “The customer service we get from Neptune and EAP Industries is as good as ever. From putting in new equipment to helping with reports and answering our questions, they’re very thorough, and nice people. It’s not just a business relationship. They’re more like family members.”

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