



How a Smart Solution for the Business of Water Improved Revenue

A WHITE PAPER BY NEPTUNE TECHNOLOGY GROUP INC.

SOLVING INACCURATE READS WITH AN AMI SYSTEM

Utility Administrator Perry Hart and his team at the City of Battle Creek, Michigan Water System had been using a mobile metering system. That system was severely underperforming, providing inconsistent meter reading information and a continuing failure of its radio frequency (RF) products in the field. They soon saw these issues have a negative impact on customer service. The utility evaluated options, considering geography and the size of its service area. Battle Creek then elected to implement a fixed network system for metering data collection.

Hart did his homework. He identified several other Michigan municipalities using advanced metering infrastructure (AMI) fixed network systems and spoke with their different department personnel, including billing clerks. “We wanted to find a common manufacturer for all our meters and reading,” Hart said, one with the best “cost-per-billing-read over time ... not having to hire out a contractor to replace everything at once before we could read.”

Battle Creek chose the Neptune® R900® System after witnessing one utility’s ability to read both mobile and fixed network reading methods with the same existing assets in the field. Citing the system’s long-range capability and especially the ease of moving from one reading mode to

another, Hart was impressed. The system allowed the City to read even in the midst of installation, which began in January 2015. And unlike the previous reading system, this technology did not require programming of endpoints in the field, eliminating some of the types of errors that the City had experienced in the past. Another advantage to Battle Creek is that its new technology has been versatile enough to collect accurate, monthly reads even from the previous vendor’s hardware. Further, this smart solution for the business of water has identified thousands of dollars in Non-Revenue Water that had been lost due to prior transposition errors.

TRANSITIONING MOBILE TO FIXED NETWORK DATA COLLECTION

As Battle Creek deployed radio-transmission meter interface units (MIUs), it also began installing fixed network data collectors. During this implementation, the City had the ability to collect data from the same endpoints using either mobile or fixed network technology. By November 2015, the City was more than three-quarters finished with installation. Battle Creek was now reading its commercial and industrial (C&I) route in two days or less instead of a week.



It found it could read the remainder of its routes in just a single day. By January 2016, Battle Creek had all of its fixed network data collectors in place and operating, gathering metering data and reporting it to advanced analytics software. According to Hart, the City is testing files as it imports them from its system, exploring various system health options. Now that Battle Creek collects meter reading data in seconds and no longer has to send out utility trucks to capture it, the City has been able to reallocate its meter reader to other needed tasks.

Hart is also pleased with how the new system has reduced estimated reads while addressing issues with failing old meters faster. He added that it has not only led to more accurate billing, but also that the system's data logging of 96 days' water consumption history has helped customer service resolve high bill complaints faster.

"When a customer has a concern with high usage, we're able to send them a very easy-to-understand PDF graph through email so that they can see when the water was used," Hart said. "We've used this feature greatly with a city-owned building that has been having a difficult time defining where the water consumption is taking place."

LEVERAGING DATA FOR BETTER DECISIONS

Hart is particularly concerned with providing large corporate customers in the area the daily-and-hourly data they need to maximize water system efficiency and minimize costs. Battle Creek is home to several major



Perry Hart, Utility Administrator, City of Battle Creek

cereal producers' and other food/beverage companies' headquarters. Not only will a customer portal enable them to monitor their usage but the new system's state-of-the-art AMI technology will also allow food and beverage customers to realize the benefits of what Hart calls "deduct metering". Hart said that a maker of food or beverage products using the water supply in their product is sending "a lot of the water they've paid for out on a truck" without that water eventually returning to the sewer system. As the City uses its meter readings to bill for both the water and sewer, deduct metering can be used to create a credit for water used in products or processes that does not contribute to the waste stream.

The possibilities for leveraging all the City's new AMI data are exciting for Hart, who anticipates incorporating metering with other activities such as hydraulic modeling and pressure zone monitoring. "We've recently worked with a consulting engineer to utilize our [AMI] data and incorporate it into an effort to model our water system," he said. "With a water system such as ours, with our different elevations,

we have two major areas at two different pressures. Being able to identify what part of town water is going to, greatly enhances the water model. It allows us to do 'what if' scenarios, and will greatly assist us in defining capital improvement projects moving forward."

He says confidently, "Better data means better decisions, which means better services."

MOVING FORWARD WITH DETAILED ACCURACY

As the City has moved to fixed network AMI, it has not only increased customer satisfaction, but it has also added to its bottom line. Hart said, "Any utility is dependent on its revenue, and it's very encouraging to see the significant increase we've seen with the dollars being collected on, for the water being sold."

Now the City has technology that works for its unique needs. When asked the biggest benefit the City has realized with its new system, Hart said, "We're now billing down to the single cubic foot. We have seen tremendous product performance with better billing and reading accuracy."

Moving forward has been made all the easier thanks to this technology, which is helping Battle Creek to "take it to the next level of technology as we're ready," according to Hart.

For technology that works for you, learn more about the Neptune R900 System at neptunetg.com and connect to what's next in water.



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