

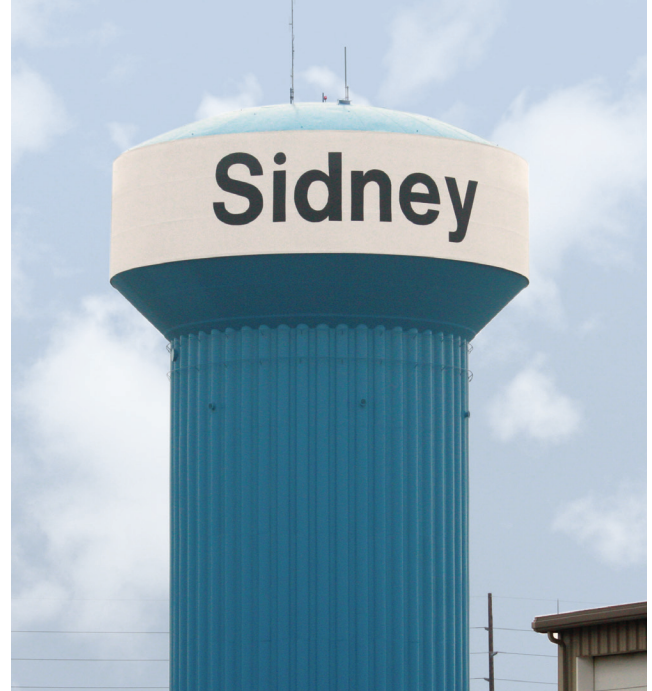
CITY OF SIDNEY PUBLIC WORKS

SIDNEY, OHIO



HIGHLIGHTS

- Number of Services: 9,000
 - 8,500 residential
 - 500 C&I
- Cut meter reading time from 360 man-hours/month with four personnel for manual reads to just seconds with no truck rolls
- N_SIGHT™ R450™ seamlessly integrated with existing billing software
- R450™ MIUs and R450™ DCs worked with City's existing E-Coder® registers
- When a storm disabled a data collector, the system's infrastructure redundancy handled extra meter readings for three weeks without loss of data
- Reduced water loss to 6% for last fiscal year; the industry average is >15%



Finding Extra Time – and Money, and Water – with Neptune's R450™ System

Manual Reads Not a Walk Through the Park

The county seat of Shelby County, Sidney, Ohio straddles the Miami River Valley 40 miles north of Dayton and 85 miles west of Columbus. Named after Sir Philip Sidney, poet and member of British Parliament, the City is home to a population of a little over 21,000. It also boasts 14 neighborhood parks; the 180-acre Tawawa Park nature area, the Miami-Erie Canal that connects Sidney with other major trade centers, and a courthouse that occupies a city block and was recently named one of the "Great American Public Places".

Chris Clark, public works director for the City of Sidney Public Works Department, and his staff serve roughly 8,500 residential and 500 commercial and industrial accounts. Clark joined the City as its utilities director in 1998. In 2007 he was looking for ways to maximize efficiencies and better read the meter investment the City had in place. At that time, a team of four meter readers spent seven to ten days a month, or up to 240 man-hours, to perform manual reads using touchpads. An extra three days (48 man-hours) was needed for rechecks, an additional day (40 man-hours) for disconnect notices, and still another day (32 man-hours) for the disconnects themselves.

Aside from these time and labor requirements, walk-by reads were further complicated each fall and winter by access issues. Piles of leaves would bury the meter pits only to be replaced a couple of months later by upwards of three feet of snow from the plows. "In the winter," Clark said, "each billing cycle, we'd have a delay of two to three weeks; and we had to send out extra staff just to clear out the pits."

Picking Up Where It Left Off, Moving Forward with Neptune

Knowing it was time to switch to an automated meter reading solution, Clark and his team began investigating systems that would reduce staff and manpower needs, reduce water loss, and more. According to a detailed PowerPoint presentation Clark created to demonstrate to the City Council the need for such a project, advanced metering infrastructure (AMI) would allow Sidney to "maximize efficiency to reduce costs, while ultimately benefiting the customers".

As part of their research, Clark's department made multiple trips to a neighboring town for demonstrations of its AMI system. Sidney then implemented a pilot of radio reads from nearly 400 homes. At the

same time, Clark successfully pursued grants from the American Recovery and Reinvestment Act (ARRA) as well as funding from the Ohio Environmental Protection Agency for the City's own comprehensive AMI system.

When the time came to choose a system, it was an easy decision for Clark. Having partnered with Neptune for more than 40 years, the City had firsthand knowledge of how accurate and reliable Neptune's meters are. And having seen the capabilities of Neptune's R450™ System – whose radio frequency meter interface units (RF MIUs) and fixed network data collectors were designed to work with Neptune's existing absolute encoders – Clark appreciated not having to strand assets. Neptune Senior Territory Manager Scott Elwell, who worked with Sidney to implement its new AMI system, said, "[Clark] had an installed base of Neptune meters in the ground and knew he could keep the City's previous investment by going with Neptune."

Picking Up the Pace by Putting in the R450 System

Installation of R450™ RF MIUs began in late spring of 2010 with Neptune Equipment Company as the system components supplier and U.S. Bronco Services as the installer. Because of Sidney's unique geographical location, about half of the MIUs were placed within pits while the other half were installed as wall units. Neptune Technology Group had already performed a propagation study during the bid process that determined the optimal positions for R450™ Data Collectors (R450 DCs) around the City, and the necessary collectors were now placed atop towers accordingly.

The City also started installation of a fiber optic backhaul for the system as well as implementation of a new computer server. Clark

needed computer software that would seamlessly integrate with existing billing software used by Sidney, and Neptune's N_SIGHT™ R450™ more than fit the bill.

During installation, the City kept the public informed of its goals as well as the progress of the conversion. Clark and his team held public meetings with the City Council while the *Sidney Daily News* included the AMI project as a part of its series of front-page articles on local ARRA projects. The newspaper also published several public notices while the City disseminated customer handouts and door hangers in neighborhoods scheduled for a given week's MIU installations.

The system-wide conversion to R450 technology had originally been estimated to take between 18 and 24 months. However, thanks to the City staff's thorough planning and a well-coordinated effort organized by Neptune Equipment Company, the team finished installation of R450 MIUs and R450 DCs in December 2010 – an impressive eight months.

Achieving Big Gains Against Water Loss

With two meter readers retiring and the other two reallocated to other tasks, the City has reduced labor costs drastically. The fixed network has eliminated the need for truck rolls because there are no longer any problems with meter access or meter reading accuracy. Not only have there been no more delays in the billing cycle, the City no longer has to send out personnel to perform final reads in move-in/move-out situations. "That really helps out quite a bit," said Clark.

"My biggest concern was water loss," Clark said. "Every gallon that you lose is revenue lost." Prior to the conversion, the Public Works

"For our last fiscal year, our water loss was just six percent, when the industry average is 15 percent."

Chris Clark, public works director for the City of Sidney Public Works Department



Left to Right: Chris Clark-Public Works Director; Jan Fishbaugh-Revenue Collections Clerk; Lori McLain-Revenue Collections Clerk; Sylvia Smith-Revenue Collections Clerk; Joel Glass-Network Administrator; Krista Sanders-IT Technician; Ken Van Hook-IT Manager; Dave Wood-Underground Utilities Supervisor; Chris Petty-Metering Foreman; Jay Ponder-Neptune Equipment Company; Karen Berning-Revenue Collections Supervisor.

Department could only hope to detect a possible leak for an individual account once a month. At that point, the customer would be given three weeks to fix the problem. In essence, even if discovered, a leak could be left unattended for nearly two months. And because Sidney residents can apply for an adjustment for undetected leaks in the water line, revenue the City lost through distribution and customer-side leaks could quickly add up.

Now using the R450 System, the City can detect customer-side leaks down to a tenth-of-a-gallon resolution; receive priority alarms automatically from N_SIGHT R450 host software alerting selected personnel of leak, tamper, or reverse flow conditions; and then notify customers of those possible leaks in the same day.

"Customers appreciate that, and it reduces our water loss," added Clark. In fact, he said, **"For our last fiscal year, our water loss was just six percent, when the industry average is 15 percent."**

The Future is Easy to See with a System So Easy to Use

The R450 System has proven its reliability in the field – in more ways than one. When a storm took out one of the data collectors, the system's redundancy easily handled the extra meter readings for three weeks without a single loss of data. And it isn't just storms the system is ready for. Clark said that the City has a drought contingency plan in place should the Miami River fall to a predetermined level. In such an event, he said that Neptune's technology will be a useful aid in water conservation, helping pinpoint excessive customer water consumption so that water restrictions could be better enforced.

Ultimately, Sidney plans to have water customers keep a closer eye on their own consumption. N_SIGHT™ IQ™ cloud-based intelligent data management and reporting software features an optional online portal that allows a utility customer to monitor and manage his or her own usage.

In the meantime, Clark is already planning to introduce another service soon; "Our finance office is gearing towards monthly billing



City Hall sign in downtown Sidney, OH

for all our customers because there's a vast difference between monthly and quarterly billing." Not only will monthly billing help water customers better budget what they spend and use, but it will also free up cash flow for the City.

Sidney's AMI success is getting noticed. Elwell said that the City has fielded calls from across the state and received several visits from a neighboring town, Bellefontaine. Clark added, "Bellefontaine had been reading meters by writing down the reads in logbooks. We brought them in for a presentation of our system in our City Council chamber, where we showed them capabilities they'd never even known about. They were flabbergasted to see actual leak detection and current consumption data." As of January 2011, Bellefontaine had begun implementing its own R450 System.

In researching their AMI system, Clark advises utilities to take a close look at what they already have and then contact Neptune to learn about solutions to their "current deficiencies". He himself is pleased with the difference the R450 System and N_SIGHT software have made for Sidney, and pleased with the service the City has received. "The support from Jay Ponder at Neptune Equipment Company and Neptune Technology Group has been outstanding – it's a big selling point."

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