# Utility Overcomes Flood with Technology Designed for the Business of Water

A WHITE PAPER BY NEPTUNE TECHNOLOGY GROUP INC.

In September 2011, the Village of Johnson City, New York Water Department had a plan. Account Clerk Mary Beth DePugh was about to send out the last set of water bills generated by the unreliable 25-year-old, DOS-based billing software. In just a few weeks, she would have brand new billing software from a new provider go live in October. The following month, the City would begin to install all-new smart meters whose data would be collected by Neptune® R900® RF automatic meter reading (AMR) technology. Johnson City's water would finally be under control.

Instead, a deluge from Mother Nature came, and Johnson City would be under several feet of water. "We lost everything," DePugh said. That included their submerged office. Much of the rest of the community was equally hard hit.

To move forward, every water utility needs a plan. When things *don't* go according to plan, it helps to have a contingency plan for that too. It's one thing to implement an orderly changeout of 15-to-20-year old meters. It's another when your community is faced with its worst flood in decades.

According to Bob Bennett, Director of Public Services, "We had over 1,000 properties affected by the flood. It would take over two years for some of those damaged or unsanitary properties to be considered safe." Those homes and businesses determined to be unsafe would later be demolished, with the Water Department losing its largest revenue-generating customer. The impact of the flood also swept away a number of personnel positions, further overburdening a workforce that recent years' budget cuts had reduced by almost a third.

## IMPLEMENTING A METERING SYSTEM TO SOLVE BUSINESS CHALLENGES

The flood was a catastrophe in more ways than one for the Johnson City Water Department. Non-Revenue Water, customer service impacts, limited resources, and even personnel safety were all now at crisis levels. However, the City still had a plan and the tools to solve its business challenges.

Determined to move forward, Bennett and his team moved into temporary headquarters at Village Hall, and began installation of new water meters and advanced, combination solid state absolute encoder/RF meter interface units – laying the foundation of a smart water network.



*Mary Beth DePugh, Account Clerk, Johnson City Water Department*

The Department's new meters are much more accurate. Testing had shown that thirty percent of the old meters registered less than half of flows, with another quarter of the old meters registering between 50 and 75 percent. The new meters are now all within the AWWA limits of 98.5 to 101.5 percent. As a result, Johnson City's metering data is much more exact with a higher degree of resolution. "Our former meters read in hundreds of cubic feet," DePugh said. "We now register consumption down to the last drop – 1/100ths of a cubic foot."

With hundreds of flooded sites and now only a handful of personnel, Johnson City would need to empower its team with the type of metering solution and actionable data to stay responsive, efficient, and resourceful. "After the flood, I had no meter reader," said DePugh. "I had to bring on someone with no previous water department experience, almost off the street. But operating the mobile AMR was like 'plug and play', and she ran with it. Our reading went on without a glitch."

Bennett said, "We're able with mobile reading to do in a day, day-and-a-half, what used to take us six weeks of walking. Not only did it help us expedite getting our data, it also saved wear and tear on our employees and kept us from having to go into flooded sites in harm's way."

## ANALYTICS MAKES DATA ACTIONABLE

"You have to have something that's user-friendly. And our system is," said DePugh, who is also pleased with how easy it is to use the sophisticated analytical software. "Compared to my old software, the new software works for me, I don't work for that software."

DePugh said, "We're capturing all of our water and our customers are paying for all of their water." They're also paying attention to their usage, now that she has their consumption activity at her fingertips. "When they call in upset about their bills, we can use that information to tell them they may have continuous or intermittent leaks. It allows for self-education and behavior modification."

Bennett said that Johnson City's metering system has helped leverage existing resources and reallocate those personnel "who are supposed to be there maintaining our system, back maintaining our system. When you lose staff, you lose productivity. We've been able to keep our water distribution people in water distribution."

The technology the Village relies upon was designed and engineered for the business of water.

As evidence, revenue has increased alongside productivity. "After the flood, the Village board questioned whether or not we were doing the right thing.

They didn't believe that we had seen the revenue that had been anticipated. However, despite losing a little over 200 customers because of the flood, the first billing period afterward showed we still had a $40,000 to $50,000 increase in revenue for the quarter."

## FUTURE COMPATIBILITY TO MEET CHANGING NEEDS

With technology tailored to meet its unique needs, the Village of Johnson City Water Department continues to share the confidence in its data with customers while reducing Non-Revenue Water. Better yet, the future compatibility of the system ensures that it can move from mobile AMR to fixed network AMI at its own pace, building on to the endpoints it already has in the field.

The Village of Johnson City Water Department was able to improve revenue and operational efficiency even in the midst of the flood because it had tailored technology solutions designed to respond to – and anticipate – its present and future needs. With the right plan and the right tools, Johnson City stands ready to connect to what's next in water.

*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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