



Western Municipal Water District

Simplifying Operations and Empowering Customers with AMI solutions from Neptune®

A SUCCESSFUL PILOT AND SMOOTH TRAJECTORY TO AMI

In 2018, Western Municipal Water District (Western) in Riverside County, California was testing the waters of Advanced Metering Infrastructure (AMI). It had just run a pilot study of Neptune's LoRaWAN® equipped technology to read 100 meters remotely, a step towards eliminating drive-by reads in the future for its more than 24,000 retail customer accounts. The results revealed a reading success rate of more than 99 percent.

Working with Western, Neptune® Territory Manager Andy Bohn helped analyze Western's current infrastructure, unique business needs, and desired outcomes. Neptune tailored a system to the utility's geographic needs as well as its business goals, taking into consideration the service area's expanse of rural routes plus dense pockets of residential accounts.

The implementation of Neptune's AMI Network solution, designed using Senet's network planning tools and powered by Senet's cloud-based network management system, provided for long-range connectivity, maximizing network performance. Once completed, Western was able to begin installing meters at will, anywhere within their service area. This capability allowed Director of Finance Kevin Mascaro and his team to change out meters at an aggressive rate, focusing on the oldest meters first – which would have the greatest impact on metering accuracy.

As of October 2020, Western completed Phase 1 of the installation: 13,600 Neptune meters with integrated radios. In Phase 2, Western plans to complete an additional 7,000 meter change-outs, reading close to 85 percent of meters by mid-2021.

OPERATING WITH GREATER EFFICIENCIES

Western has used the new technology to maximize operational efficiencies, whereas it had been outsourcing the majority of its meter reading.

"With fixed network data collections, we don't have to use a third party or send out staff as often anymore," said Mascaro. "Reading turnaround time



CUSTOMER

Western Municipal Water District (Western)

SERVICE TERRITORY

Western serves nearly 24,000 retail customer water services in Riverside County, California.

SOLUTION BENEFITS

Share actionable metering information immediately with personnel

Detect probable leaks remotely without the need for truck rolls

Empower customers to take better control of their water usage using real-time data

Use Network-as-a-Service to eliminate burden of installing and maintaining AMI network infrastructure

Smart Water IoT applications and devices can communicate data across the same AMI network



has dramatically been improved. We've experienced a significant overall gain in efficiency. Before, our water loss was 12 percent; now, it's no more than 3.5 percent. Because of Neptune AMI, we've significantly offset that loss of revenue."

That's especially important when taking into consideration that Western has limited access to local groundwater sources and therefore has to purchase its water from nearby agencies and from as far away as northern California (via the California Aqueduct). According to Mascaro, Western staff morale has increased since implementing the Neptune system. Our personnel are proud to be able to resolve issues that a customer has in real-time, within the same call. We've also been able to reduce staff labor and vehicle emissions."

Customer Service Supervisor Tresa Huffman said, "We're outsourcing far fewer readings, and we've greatly reduced the number of meter reads that we have to physically send someone out to get. We've also eliminated re-reads for high readings."

SHARING THE POWER OF DATA WITH CUSTOMERS

The ability to read remotely has been uniquely helpful during the current COVID-19 global pandemic. With the need for social distancing, Western can continue providing exceptional service and secure critical meter data while staying socially distant. The new infrastructure enables Western to support customer billing concerns over the phone.

Huffman mentioned how the system has aided customer service by stating, "When a customer has a question about a high bill, we can assist them right then and there, because the exact time of their usage can be seen – for instance, if they're using a lot of water for irrigation during certain time periods.

"Our previous population of Neptune meters enabled us to go out to that meter and download consumption activity beyond what a monthly reading could give us," Mascaro added. "Now that we're replacing all meters with

"Neptune has positioned us to help customers have greater control over their water bill by managing usage in real-time."

- Kevin Mascaro, Director of Finance,
Western Municipal Water District

LoRaWAN-equipped Neptune meters, we have really detailed data coming in multiple times a day."

Mascaro said, "It's important to be able to provide our customers with leak alerts, or what they use over time graphically – 'How did my actual usage compare with my water budget?' Neptune has positioned us to help customers have greater control over their water bill by managing usage in real-time."

Western now has the ability to make information actionable immediately, finding leaks remotely and even heading off high bill complaints. "An informed customer is an empowered customer," he said. "They can take better control of their water usage using the real-time information that Western can now provide." In addition, Western is moving toward the implementation of an online portal where customers can see their water use numerically and graphically, and over various time periods (hours, days, weeks, etc.). Customers will also be able to sign up for leak alerts so notification will be near instantaneous.



NETWORKING THAT PUTS THE *BUSINESS OF WATER FIRST*

To eliminate the burden of installing and maintaining network infrastructure, Western's Network-as-a-Service (NaaS) solution is actively managed and monitored by Neptune. This saves Western time, labor, and infrastructure maintenance costs. "I'm not in the antenna management business, I'm in the water business," said Mascaro. "Neptune is handling the infrastructure, freeing us up to focus on issues such as Non-Revenue Water. They're helping us move towards full, fixed network AMI."

A significant benefit of Western's AMI solution is the "open architecture" attribute that LoRaWAN provides, and the availability of Smart Water IoT applications and devices that can communicate data across the same AMI network. The City of Riverside and other surrounding

communities that Western serves will be positioned to reap the benefits of this communication infrastructure as they identify other LoRaWAN device applications that may support an improvement in operational efficiencies, sustainability and enhance the quality of life in their communities. Neptune's LoRaWAN radio endpoint is the only LoRa Alliance™ certified solution for Water AMI today.

As Western completes the meter installations, Mascaro said he is looking forward to the enormous cost savings of fixed network data collection; not having to maintain or monitor AMI network infrastructure; and not having to store or manage the reams of data that it can now access – and make use of – in seconds. Mascaro stated, "Neptune has given us more tools at our fingertips to assist customers more efficiently and truly win our day."



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