

The Path to Sustainability: Advanced Water Metering

By Peter Sanburn

*D*rastic regional variations in conditions recently brought attention to the fact that overall water supply challenges in the U.S. exist. In Georgia, water levels in Lake Lanier, the reservoir that provides Atlanta's water supply, remain dangerously low at 13 ft below normal levels. Two thousand miles away in the southwest desert, Lake Mead, the primary water supply to growing urban centers such as Las Vegas and southern California, stands at 52% of its capacity—a historic low. Scientists are seriously concerned about the viability of the reservoir to meet long-term regional water supply needs.

As our growing society puts a strain on the environment, these events show that water resources are not endless. The southeastern and southwestern U.S., as well as other parts of the country, will need to undertake significant social change in coming years regarding how people and businesses perceive and use water resources. This requires that water providers find ways to optimize every drop of water and begin to secure long-term control over a critical resource.

Tracking Customer Behavior

Granular interval data enables data logging that can be used to precisely monitor usage and create customer-specific usage profiles. These profiles are time-stamped, enabling different billing rates to be assigned for different time periods. Customers' usage behavior can then be influenced with higher rates to reduce consumption at determined periods, helping meet water management needs. Providing customers access to their usage data and associated pricing via the Web enables them to make informed decisions concerning consumption and better understand their participation in conservation programs.

Advanced metering systems are also proving to be highly useful for real-time monitoring of metered "leaks"—the contributor to lost water that can lead to a high-bill issue. An AMI endpoint monitors and triggers an alert for in-home leaks, such as a leaky toilet. A leak notification can be issued, resulting in proactive customer service and water loss reductions.

AMI systems can also be leveraged to backhaul a distribution system's leak-detection data. Acoustic sensors continuously monitor distribution systems for the specific noise signatures that even the smallest leaks make. Once detected, an alert is sent to the utility so that the leak can be corrected before becoming significant. Daily monitoring for system leaks helps water providers become better water stewards by reducing nonrevenue water losses and the associated operating expenses of pumping and treatment costs.

Advanced metering also enables utilities to effectively manage conservation programs. The interval data that an AMI system collects can be used to create a baseline of usage. Water usage during the conservation program is measured against the baseline to help determine the program's effectiveness. With advanced AMI software, customer usage can be analyzed for program compliance and water abusers can be isolated and tracked.

Looking Ahead

New tools and strategies for effective water conservation will be an enduring necessity in the 21st century. Advanced metering solutions answer the call by introducing a more frequent, highly accurate measurement of water consumption, coupled with new analytic capabilities such as leak detection, both under the street and behind the meter. It is foundational technology for enabling and supporting many forms of conservation, ranging from reduction of lost water to time-based pricing to conservation program management.

This new tool empowers water providers to monitor and manage the delivery and usage of water more effectively and efficiently. A sustainable future will demand nothing less. **WWD**

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Focus on AMI

Water utilities face many hurdles in regard to resource management, including consumer consumption behaviors, operational efficiencies, distribution reliability and access to timely and detailed usage information. The industry is turning to advanced metering infrastructure (AMI) as an answer to these challenges.

Water providers are looking for AMI solutions to help balance the increasing demand for water against finite and often diminishing supplies. Itron is answering the call with Water SaveSource, an advanced metering and monitoring technology for the challenges water utilities face. Its technology gives providers access to robust data logging features, identifies where water is being used and lost and assists in conservation program management.

With only 0.3% of the earth's water deemed drinkable while demand is growing, advanced metering systems are gaining attention over traditional meter reading systems. Effective water resource management means water providers need to collect accurate and frequent meter data for precise data logging, a necessary capability to truly understand customer usage patterns. With AMI systems, water providers are able to collect meter reads every day, hour or 15 minutes, if desired.