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Issue Brief

Technology on Tap: Advanced Technology Streamlines Rural Water Systems' Operations

A closer look at the high-tech tools and applications that U.S. rural water systems are successfully implementing.

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Sometime in the next year or two, Randall Community Water District of Lake Andes, South Dakota, could be using a drone to patrol its operations.

General Manager Scott Pick and his distribution manager, Chad Anderson, believe the aerial tool could play an important role in inspecting elevated water tanks and other equipment for problems such as cracks or ice build-up. The drone's camera could also capture a look at the terrain of the rural water system's entire service territory, allowing it to mark the topography with a Global Positioning System (GPS) and then integrate the data into its computerized monitoring system. Maybe, too, a drone someday could employ ground-penetrating radar to help the South Dakota water company pinpoint every inch of its 2,000 miles of buried pipeline.

Pick has already priced a drone that might work for his company. At a cost of just $5,000, it would be a bargain compared to the $50,000 price tag of other drones he's seen.

But first, Pick and his team must complete a $1.5 million transition to an automated meter reading (AMR) system. A year in the works, the new AMR, also known as a fixed-base radio-read system, will replace 2,800 older meters to boost efficiencies and control costs. That will be a major step forward for Randall Community Water, which pumps 1.3 billion gallons of water a year.

"The new AMR is a win-win for us and our customers," Pick says.

Randall Community Water District isn't alone in finding operational improvements through advanced technology. Across the U.S., a growing number of rural water and wastewater systems are taking advantage of technological innovations to increase efficiencies, save money, reduce water waste and comply with environmental regulations. They're using advanced AMR systems, internet-connected smartphones and tablet, GPS and Geographic Information Systems (GIS). They're also relying on the cloud's remote servers to store their data. These and other high-tech tools are enhancing the water pumping, treatment and distribution infrastructure, and modernizing communications to link customers, office personnel and field staff.

"Technology is critically important," says Randy Jencks, professional engineer and general manager of Kingbrook Rural Water System in Arlington, S.D. "It's allowed us to perform daily functions with fewer people on staff and save money."