

OREGON'S WEST SLOPE WATER DISTRICT EXPERIENCES 300% FASTER METER READINGS WITH MODULAR AMR SYSTEM

Case Study

OVERVIEW

West Slope Water District is located west of Portland in Washington County and provides water to a population of around 10,300 residents. Being a relatively small water district, with only three field personnel, finding ways to improve operational efficiencies is very important to ensuring the water distribution system continues to run smoothly.

INTRODUCTION

West Slope installed an Automated Meter Reading (AMR) Systems a few years ago. AMR Systems consist of a water meter, radio transmitter, radio receiver, and reading software. The solution that West Slope installed had the meter and radio transmitter combined, so the radio transmitter was integrated within the meter itself.

Daniel Gridinar, Operations Manager for West Slope Water District, was instrumental in upgrading the District's water meter reading program. Gridinar said, *"When our old meters started failing, it seemed like a good time to look at other options and see if we could improve the time it took to gather meter readings and also the quality of data transmission."*



WEST SLOPE WATER DISTRICT

One of the drawbacks of an integrated water meter and radio is that the radio transmission is now 12-36 inches underground. Two of the variables that effect radio propagation are metal and water. West Slope gets a lot of rain in the winter and spring months making it common for meter boxes to have water inside much of the year. In addition, meter boxes can fill with water in the summer because of irrigation systems. The integrated radio when combined with water in the meter box, forced West Slope crews to drive every street slowly (less than posted speed limit), and to even stop at many customers to wait for meter reads to come into the reading software. This made monthly meter reading more time consuming than it needed to be.

“Sometimes we had to get out of the truck to reach the signal, which poses a safety risk for personnel, having to access private property. For this reason, we would sometimes have to skip a meter, and then make arrangements to go back at a later time,” said Gridinar.

Over the past few years, West Slope has been replacing old meters when they fail with the Mueller Systems® modular AMR System. The AMR migratable radio antenna is separate from the register, connected via an industry standard inline Nicor connector. It is installed high in the meter pit, above most, if not all, water that may be in the meter box. This placement ensures a stronger signal for meter reads. These new Mueller Systems radios provide efficient, long-range two-way communication. LoRa—short for long range—is resistant to most interference in the 900 MHz band ensuring readings is reliable. This allows utilities to drive every other street and drive at the posted speed limit.

To address the tough weather conditions and rugged outdoor environment, the meter enclosure has multiple layers of protection, including factory potting, to meet the industry standard warranty period.

West Slope’s meters are now roughly half of the old and half of the new, providing an excellent opportunity for comparing read times and getting some hard data on efficiencies. At the start of 2023, under wet conditions, West Slope completed a timed study of meter reads. Below are the findings:

	Integral AMR Meter	Mueller Systems Modular AMR
Total Read Time	5 hrs 9 min	1 hr 54 min
Total Meter Read	1,522	1,711
Hours per Meter	.00338	.00111

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“When adjusting for the number of meters read, the new Modular AMR system is over three times faster than the older meters, which is a significant time saving that enables our crews to attend to other tasks. The new radios are also easier to install and being modular means we can more easily maintain our AMR system,” concluded Gridinar.

The Mueller Systems AMR comes with EZ Reader™ Software - an easy-to-use local software that manages data collection for the entire route. The EZ Reader application is capable of interfacing with any billing system, including custom developed systems. This streamlines the process of data collection to data action, reducing the potential for human error from manual data entry.

As utilities across the country are adopting more digital solutions in the hopes of doing more with less, West Slope Water District’s approach of utilizing a modular AMR meter reading system, is an excellent approach that can decrease utility labor hours associated with meter reading, increase efficiency, and provide measurable returns on investment.

