



Photo: Abra Water

CASE STUDY



Abra Water Cuts Loss Rate by Over 50% by Switching to Metron

Arizona utility saw overnight benefits after trading decades-old equipment for modern smart meters.

Abra Water has served the community of Paulden, Arizona—a small town two hours north of Phoenix—since 1961, and until recently many of its water meters dated all the way back to the utility’s founding. In recent years, that began causing serious headaches, with aging equipment failing to properly record water flow and making it hard to accurately bill customers.

Fortunately, in 2023 Abra secured a grant to fund a major infrastructure upgrade. Over the next few months, the utility installed over 820 Metron smart meters, covering almost all of its residential and commercial connections.

Armed with accurate, real-time data, Abra has since slashed its water losses by over 50%, supporting its conservation goals and ensuring customers are billed fairly for the water they use.

“As soon as we got Metron meters installed, our water losses went way down,” explains operations manager Rod Yarbrow. “Before, our loss rate was anywhere from 18 to 22%—but since we started tracking things properly, we’ve been below 10% just about every month.”

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Abra’s big upgrade

Abra’s infrastructure overhaul was made possible by a grant from the Water Infrastructure Finance Authority of Arizona, which funded about 80% of the project’s cost. “We didn’t have the money to do it on our own, but with the grant’s help, we were able to get the meters in,” Yarbrow explains.

Abra selected Metron as its partner for the upgrade because the company's cellular meters don't require drive-by readings or expensive transmission towers. "I really, really liked the idea that Metron's meters would connect through existing cellular towers," Yarbrow says.

"Once a meter's installed, we can basically leave it alone—it's just there every day, shooting out the information we need."

Metron's powerful software was another key selling-point. "Some of the other companies wanted another \$18,000 or \$20,000 for their software, or for equipment for drive-by readings," Yarbrow says. "But Metron's software is free, and does so much—plus it's very user-friendly and easy to navigate. I was just really impressed with it."

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The installation process went smoothly, with meters online and ready to use right out-of-the-box. "I figured there was going to be some breakage, but it was very straightforward—we put in over 800 meters, and I don't think we broke a single one," Yarbrow says. "Right away, we were getting strong signals on pretty much everything."

Immediate benefits

With the new meters up and running, the Abra team saw rapid results. All Abra's water comes from a single well—and it quickly became apparent that the old master meter had been running fast, and overestimating total production. Even worse, the 60-year-old mechanical meters on homes and businesses around Paulden had been running slow, and failing to track customers' full consumption.

With six million gallons flowing through Abra's pipes every month, that double whammy—overestimating production and underestimating consumption—put a big hole in the utility's bottom line. "We'd been billing less than we should—and at the same time, the old central meter said we were pumping way more than we were," Yarbrow explains.

"When we put Metron meters in, our pump-side numbers went down, our residential readings went up, and between the two our water losses shrank significantly."

With about 50% less waste to account for, Abra is now charging customers properly for the water they use. "We're billing for more water, so our revenues have gone up," Yarbrow explains. "And the numbers we're reporting to the government are better too—they're much happier to see these lower numbers."

In the long run, more accurate data will mean lower bills for customers. "Being more accurate with our reporting is better for everybody," Yarbrow says. "We know exactly how many gallons we're selling—and the Arizona Corporation Commission can use that data to set the right rates for our customers."

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Leak prevention

Accurate, minute-by-minute flow data also makes it far easier for Abra's team to find and remediate leaks. "Before, we'd only find a leak if somebody called and reported water running," Yarbrow says. "Now, we're catching broken pipes much faster than we did before."

It's not just broken pipes, either. Yarbrow and his team can spot excess water-flow on a meter-by-meter basis, and warn customers quickly if anything's amiss on their property. "Just yesterday, we had a customer come back to us saying 'Wow, thank you so much—I had no idea, I'd left my water hose running for two days!'" Yarbrow says. "They're very grateful, and it means they don't get billed for the extra water."

“We can tell them within 36 hours, instead of them waiting three weeks to find out something’s wrong.”

Metron also makes it easy to spot unauthorized water use, such as residents who’ve turned a disconnected meter back on, or tapped into a neighbor’s water lines. Previously, such cases were seldom detected. Now, though, the team can see exactly where and when water is being used—and that ensures Yarbrow can quickly spot any unauthorized activity.

“I check the WaterScope each day, and look at any meters where there’s unusual usage,” Yarbrow says. “I have a much better chance of discovering problems now than I did before.”

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Operational gains

Switching to Metron brought another big benefit: no more manual meter reads in the hot Arizona sun. With rough dirt roads and challenging terrain, there was always the risk of someone getting seriously hurt while out taking meter readings. “It took a lot of time and it was hard physically,” Yarbrow says. “There was the potential of getting hurt every time I went out there—tripping over something, getting bit by a snake, something like that.”

Now, the data loads automatically on a daily basis, with no risk to workers and no wear-and-tear on Abra’s vehicles.

“Not having to get in and out of the truck, and bend over and stick my head in boxes 800 times a month to read all those meters—that’s been a great thing,” Yarbrow says. “It’s probably been the greatest benefit for us, aside from having accurate numbers for water loss.”

Because it’s possible to grab a meter’s reading on WaterScope, it’s far easier to deal with customers who move in or out of their properties. Readings can even be backdated if a customer forgets to notify Abra in advance. “I can look at the meter on WaterScope, and go back a few days to get the reading if I need to—it gives me a lot of flexibility that way.”

Next steps

The Abra team are happy with the impact of their big upgrade to Metron equipment, and also with the quality of the customer support they’ve received throughout the process. “So far I have no complaints. Everything’s worked really well,” Yarbrow says.

The next step is to integrate Abra’s new billing system with WaterScope, so that readings automatically feed into their back-end billing software. “We just switched to this new billing system, but it should all happen with just a few clicks of a button,” Yarbrow says. “That’ll be great—I have a lot of confidence in it.”

Over time, Abra plans to add more Metron meters at a few remaining properties dotted around town that are still using older manual equipment. “We had a few vacant homes, and weren’t in a big hurry to put new meters in for those properties,” Yarbrow says. “But we’ll be getting more Metron meters put in there soon. I’m really glad we went with you guys.”

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