

Case Study

BACKGROUND

When the City of Sunnyside, Washington needed to increase revenue, officials expected that raising water utility rates by 6 percent would provide the additional revenue from the 1 billion gallons it pumped each year. However, in the 12 months following the rate increase, revenue was down by \$120,000.

In an effort to find the cause, utility management reexamined its customer base of 3,500, which included 1,000 commercial businesses. They discovered that large meters used by commercial customers accounted for 70 percent of their total revenue. A look at the billing history of its top 10 water users revealed that charges to their largest customer – a consumer products factory – decreased from \$7,000 to \$1,600 per month for more than a year.



“The drop in that customer’s billing caused us to lose out on 16 months of revenue, and almost to the penny that lost revenue accounted for the \$120,000 shortfall that we were experiencing,” said Jim Bridges Director of Public Works for the City of Sunnyside.

Utility workers investigated to learn why their top customer’s charges dropped so dramatically, and found performance problems on the company’s six-inch commercial water meter. At the same time, Sunnyside management officials found that their financial software did not have the ability to issue an alert when meter readings plummeted. After the first month of the reduced measurement, the following months were consistently low, which kept the problem under the radar.

Bridges acknowledged that the utility’s main focus is on residential customers because they are typically the ones who call with issues. “Commercial customers usually don’t call. They’re worried about getting their product out, so there was no reason for us to go out and look at a commercial meter.”

CHALLENGE

Utility management faced two issues: In addition to resolving the revenue loss, the City of Sunnyside needed to comply with the Washington state Municipal Water Law, designed to protect water resources. According to the Water Use Efficiency Guidebook, the law demands that “municipal water suppliers must use water more efficiently in exchange for water rights certainty and flexibility to help them meet future demand.” To enforce the law, the state’s

Department of Health created the Water Use Efficiency program, “intended to achieve a consistently high level of stewardship among all municipal water suppliers.”

SOLUTION

A long-time Sensus customer, Sunnyside officials called the large meter experts at Sensus and asked them to investigate the issue with their largest commercial meter. Sensus staff reviewed the situation and suggested three areas for improvement:

1. *Repair the existing meter*
2. *Order a new OMNI™ meter to replace the old meter, and*
3. *Educate Bridges and his staff on the importance of an aggressive large meter testing program*

The utility immediately launched a city-wide testing program and changed out all of its top-ten large meters to Sensus OMNI models, which quickly became an asset for Sunnyside. The meters have just one moving part and are made of epoxy coated iron instead of brass, which makes them lighter, easier to maintain and install, and more cost-efficient than other large meters. OMNI Compound meters also feature a single chamber, versus the double chamber found in other products, allowing it to measure both extreme low and high flows from a single measuring chamber. In addition, OMNI meters have built-in features to streamline testing, which set them apart from other large meters.

Jack Jackson, Technical Product Manager of large water meter technology at Sensus, said the OMNI meter was specifically de-

signed to ease the accuracy testing procedure. Every OMNI meter comes standard with a built-in test port and test display mode. When conducting tests, utility personnel can quickly tap into the test plug with their testing equipment, and use the re-settable totalizer. Also, the re-settable totalizer allows them to reset the unit to 'zero', which makes the math of finding the percentage of accuracy easier and makes the testing process user-friendly.

The re-settable totalizer allows utility staff to match the registers of the test meter with the OMNI meter. "The OMNI meters use a special, high resolution totalizer - where a standard meter would get one gallon increments on the dial, the OMNI test display mode can measure down to the hundredths of a gallon," Jackson explained. "OMNI meters capture information that allow utilities to make better decisions regarding operational and customer concerns."

Bridges said the testing features of OMNI made the unit attractive as the meter of choice. He said that other benefits which led to the full meter changeout of its top ten customers include the extended high and low flow sensitivity range and the data-logging feature. The datalog allows Sunnyside to download the hourly maximum and minimum flow rate details, in addition to overall consumption for up to 31 days.

"In the past, we didn't treat our commercial meters any differently than residential meters. Since we embarked on an aggressive schedule to test all of our large meters once a year - not only has our revenue increased, but we have also reduced unaccounted for water from 10 percent prior to our testing program to just 1 or 2 percent," Bridges added.

Bridges said keeping large meters running efficiently keeps Sunnyside - a city that consists of mostly vineyards and farming communities - in compliance with the state-mandated legislation. And compliance is important, because failure to follow the law impacts system operations and may require costly repairs. "Thanks to our testing program, we were already in compliance when these laws took effect," Bridges said.

Sunnyside's budget for its large meter testing program is \$7,000 per year. Utility analysts project that the now-efficient large meters will help Sunnyside gain \$100,000 per year in additional revenue. By working in partnership with Sensus and adopting a proactive role in testing its new large meters, the City of Sunnyside was able to improve water usage and reduce this year's rate increase from 6 to 4 percent.

"We benefit from the reliability and service we get as a Sensus customer. If we have a problem, Sensus is right there to help us," Bridges said. "We appreciate that they don't just fix the issue and move on, but they take time to educate us about strategies to make our operations more efficient."

CONCLUSION

"Because we firmly believe in the importance of testing large meters, we designed the OMNI meter with built-in features to streamline testing, and accurately measure extreme low and high flows, so that testing can become a core component of a utility's meter maintenance program," Jackson said. "An important part of a water utility's operations should be a systematic testing and maintenance program for its larger meters."

Added Bridges: "My advice to others in this same situation is to get on top of it. When you're talking about shrinking dollars in customers pockets, which means shrinking revenue for your city, it's imperative you understand your meter system and the maintenance requirements. Even a few percentage points of inaccurate measurement on a large meter can cost a utility thousands of dollars per month."

Without testing, a utility is simply guessing on the accuracy of its large meter," Jackson said. "The secret to a quality large meter testing program is preventing issues before they occur. This means that it is important to keep detailed test records in order to provide for tracking a meter's accuracy and performance over time."

	4" OMNI T2 Meter	4" Turbine Meter
Operating Range	3.0 - 1,000 GPM	15.0 - 1,000 GPM
Low Flow (95%)	2.0 GPM	10.0 GPM
Maximum Intermittent Flow	1,250 GPM	1,250 GPM
Pressure Loss	8.7 PSI @ 1,000 GPM	6.3 PSI @ 1,000 GPM
Maximum Operating Pressure	200 PSI	150 PSI
Maincase	Coated Ductile Iron	Bronze



1 1/2" OMNI Meter in a 2" installation with a 2" setter showcases the ability to downsize the meter and still meet the demand requirements.