

Smart Water Meters Gain Traction in Drought-Ridden California



Will more cities follow San Francisco's lead?

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When San Francisco's water meters were coming to the end of their lifespan about six years ago, the city wanted to make sure the next set of devices installed would prove useful for the next 20 years.

"It's the best of both worlds," Tyrone Jue, director of communications for the San Francisco Public Utilities Commission, which provides water and sewer service to the city, said of the system that allows for digital and ANALOG reads of the water flow.

San Francisco is the largest city in California to make the full switch to smart water meters, with 96 percent of the technology deployed so far. The city wanted not just more accurate reads, but also more frequent reads, as well as the ability to share detailed data with consumers and identify and stop leaks faster. It chose a communications system from Aclara; most of the meters are from Elster/AMCO.

Like other large cities, San Francisco had already had water meters for decades. In the Central Valley, however, more than 200,000 homes do not have meters -- although that is changing with a statewide mandate that meters must be installed everywhere by 2025.

Bloomberg New Energy Finance expects U.S. water utilities to spend \$2 billion on smart water meters through 2020 as more cities replace their infrastructure and water prices

rise. San Francisco estimated the digital water meters were approximately double the cost of traditional analog meters.

For cities that leverage the latest technology, it could help to meet Governor Brown's recent mandate of a 25 percent water cut by the end of this year. California's water board has already said the reductions will not be the same everywhere. San Francisco may only have to reduce water use by an additional 10 percent. The city averages about 45 gallons per capita per day, COMPARED 🇺🇸 to 69 in Los Angeles and 81 in Sacramento. For those municipalities that have been more lenient with water restrictions as the drought has persisted, the mandatory cuts could rise above 30 percent.

Sophisticated water metering has been slow to be adopted, even in water-scarce California. Now, many more places are taking a closer look. Jue said that representatives of 40 different cities have called to talk about San Francisco's technology and upgrade experience in the past few years.

From 60 days to near-real time

Most California cities already have ANALOG 🇺🇸 water meters, but the data they produce is not very useful. It is often not collected daily or weekly, or sometimes not even monthly. San Francisco had been collecting data every two months before the upgrade, which is close to the norm.

Now, the data is collected every few hours from the meter and San Francisco can alert a customer after abnormal usage levels that last three days. For the time being, the city places a phone call and sends out a postcard to tell the water customer about the potential leak, but Jue said they hope to automate that with text alerts and emails soon.

Customers who are interested can see their daily water consumption via a web portal. The portal was released last summer as the drought worsened, even though functionality is limited. "We wanted to put it in front of customers, even though we want to do so much more," said Jue.

There is still a long way to go. About 6 percent of San Francisco's 178,000 water accounts have logged into the portal to date. Even so, the water agency credits the

portal with being one of the tools that helped San Francisco achieve an additional 8 percent water savings last summer, on top of about 20 percent in the past decade.

One of the major hurdles to getting more people to use the portal is that although it's tenants who are using the water, the landlord often pays the water bill, a situation often referred to as the split incentive problem. The water agency is working through the hurdles and hopes to find a solution soon. For San Francisco, data and customer interaction will be key to achieve more savings, even if the city only has to shave a few more percentage points to meet this year's mandated water use reduction issued by the state.

San Francisco will need to make targeted cuts in its water use since it has already slashed consumption, and unlike some other cities, it cannot just rip out large swaths of grass. "We don't have big lawns for easy savings," said Jue.

Instead, the water agency is using the interval meter data to strategically target irrigators and large buildings. With the interval meter data, for instance, the water agency can calculate exactly how much water would be saved by upgrading toilets in a large apartment building or office building.

As San Francisco dives deeper into analytics and customer segmentation around water use, other cities are moving more slowly. Los Angeles is reportedly using smart water meters only to target repeat offenders. Part of Governor Brown's mandate is to levy fines on those who overuse water, so even limited use of smart meters could prove effective for local water agencies.

San Francisco's water and sewer utility is confident that its INVESTMENT  in smart meters will help it meet the new mandate, and any others that are imposed in the future. "All of these tools have made a difference," said Jue. "People are digging deep, and we're coming out looking good."

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