

# Tool|kit

## ENERGY RETROFIT



# Water Submeters Cut Use, Save Money

BY FRANK LOVECE

**ONE BIG THING:** Water submetering. That's when residents pay for what they actually use.

**Say what?** Digital technology makes water submetering practicable, even in apartment buildings. Here's how it works: in each apartment, small digital meters are installed on every water pipe, or on individual fixtures, such as a toilet, showerhead, or sink. These meters communicate wirelessly to a gateway located in the building, and this data is then transmitted to the cloud. From there, the data goes to a third party, who will generate bills and "leak and event" reports. The meters track gallons-per-minute, number of flushes, and amount of time water has been running continuously.

**What you need to know.** How many digital meters each apartment requires depends on your building's water pipe configuration. It can range from one to seven per apartment.

**The big question.** Why would you consider this? A couple of reasons:

- First, to encourage residents to conserve water. If people see how much they're using and they pay for it, there is an incentive to use less.
- And, second, to eliminate an expense item on your corporation's financial statement. Instead of the



residential water bill being a corporate expense, it is billed directly to each apartment.

**So what's the cost?** Roughly speaking, says Don Millstein, president of H<sub>2</sub> Degree Global & Water Energy Solutions, the meters cost \$200 to \$225 each, including the wireless infrastructure. In general, toilets use 40 percent of an apartment's water, the shower/tub uses 40 percent, and kitchen hot water uses 5 to 10 percent. By metering just the kitchen hot water, toilet, and shower, you are monitoring up to 90 percent of an apartment's water use with just three meters.

**And what's the payback?** That depends on the co-op's annual water bill and how many water meters the corporation buys. CPA Carl Cesarano, a principal at Cesarano & Kahn, works with a 60-unit building in the Bronx that pays about \$59,000 annually for water usage. If this building were to install one meter per apartment the cost would be \$12,750; four meters per apartment would cost \$51,000. If building staff provided the labor, these devices would pay for themselves in less than two years,

depending on which scenario was chosen. Meanwhile, shareholders would be paying for their own water (and hopefully using less overall), and the co-op corporation would no longer be footing the residential water bill. Pressure to raise monthly charges would ease.

**Be smart.** Sharon Gardens, a 178-unit condo complex in Woodbridge, New Jersey, recently installed water metering. "Our water bills were going up, as were our sewer bills," says Gloria Landi, the current property manager and a former board member of Sharon Gardens. "Owners should be paying for their own usage in order for [common charges] to not get higher," she says, "and also for owners and residents to not waste water and to be aware of leaks. If they owned their own [single-family] home, they would be paying water and sewer."

**Extras.** There are side benefits.

- Water submetering detects leaks and generates a report for building staff to follow up on. "In one bathroom, the monitor may register a normal day as 10 flushes at two gallons apiece," says Millstein. "If the monitor registers 100 events at 0.3 gallons each, there's a flap-valve in the toilet tank leaking water. That generates an event report that building management or maintenance staff can address."
- It can also spot waste, such as a faucet inadvertently left running. The monitor could generate a report "if it sees water running for, say, two hours straight," Millstein says.
- It helps identify dangerously crowded living conditions, he adds. "One bathroom may normally have 10 flushes a day. If the monitor registers 25 or 30, maybe it's a party, maybe someone ate a bad burrito. If that continues for a week or two straight, that brings up potential over-occupancy." ■

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