

# HABITAT Energy Retrofit

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## An Innovative Approach to Water Conservation

By Frank Lovece

**1 big thing:** Water submetering. That's right, residents actually paying for what they use.

**Say what?** Digital technology makes water submetering practicable, even in apartment buildings. The way it works is this: small, digital meters are installed at each pipe or on individual fixtures (such as a toilet, shower or sink) in each apartment. These communicate wirelessly to a gateway which is 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, leak and event reports. The meters track gallons-per-minute, number of flushes (events), and the amount of time water has been running continuously.

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

**The big question.** Why would you consider this? Couple of reasons.

- First, to encourage residents to conserve water. If people see how much they are using, and they actually pay for it, there is more incentive to use less.
- And second, to significantly reduce an expense item on your corporation's financial statement. Instead of the water bill being a corporate expense, it is billed directly to each apartment.



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**So what's the cost?** Roughly speaking, according to Don Millstein, president of H2O Degree, the meters cost \$200-225 each which includes 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 5-10 percent.. By metering just the toilet, the shower and the kitchen hot water you cover 85-90% of an apartment's water use with just four meters. Sensors are placed on exposed pipes and can be placed within a showerhead.

**And what's the payback?** CPA Carl Cesarano of Cesarano & Khan represents one 60-unit building in Long Island City, with working people not home most of the day, paying about \$27,000 per year in water. Another 60-unit building he reps in the Bronx pays about \$59,000 annually. At an average \$212.50 per meter, a 60-unit building requiring one meter per apartment would lay out \$12,750. A similar building with four meters per apartment would lay out \$51,000. So in these hypothetical cases, with building staff providing labor, payback would be anywhere from within three to six months to within one to two years.

**Be smart.** Sharon Gardens, a 178-unit condo complex in Woodbridge, N.J., 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."

#### **Side benefits.**

- Water submetering can detect leaks, and will generate an event report for building staff to follow up. "In one bathroom, the monitor may register a normal day as 10 flushes at two gallons apiece," says Millstein. "If the monitor registers a hundred events at 0.3 gallons each, there's a flapper 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, like a faucet inadvertently left running. The monitor could generate a report "if it sees water running for, say, two hours straight," Millstein says.
- It also helps identify dangerously crowded living conditions, he suggests. "One bathroom may have 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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