



Saving Water and Money Through Leak Detection in Affordable Multifamily Housing

CORPORATE WATER STEWARDSHIP CASE STUDY

MAY 2024

INTRODUCTION

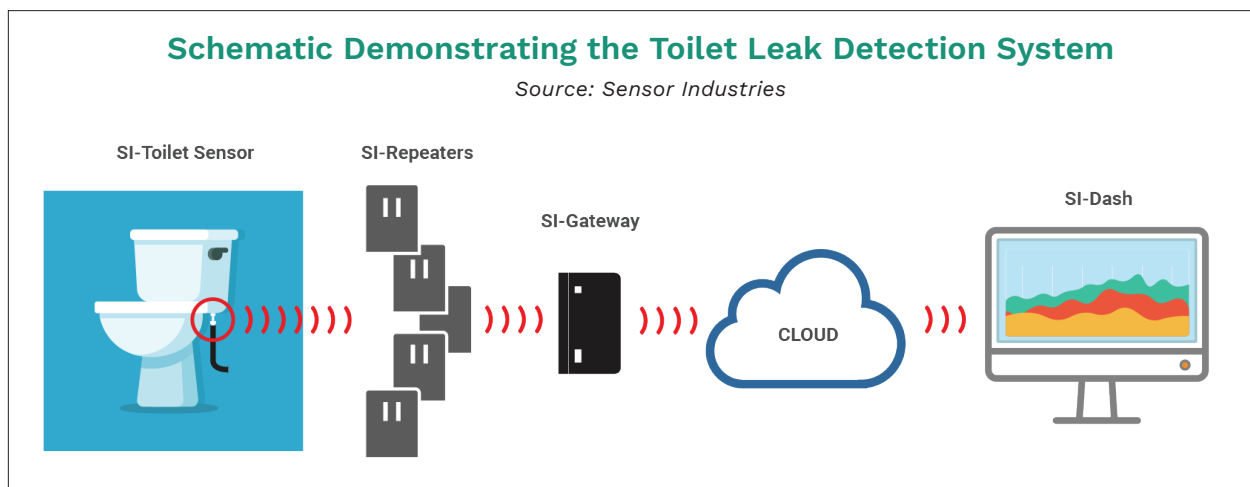
Water leaks often go undetected in large, multi-unit buildings, where plumbing across numerous units shares a single metering system. In affordable, multifamily properties, most of which are occupied by renters, this challenge may be compounded by building maintenance that depends on resident reporting. Residents may not report minor leaks or may have little incentive to respond to non-damaging leaks, and building maintenance teams may have no easy way to identify leaks without resident reporting. Additionally, some leaks are undetectable, especially when a large building does not have individual meters to measure unusual spikes in water use for each unit.

Leaky toilets are a leading source of indoor water waste, and toilet leaks in master metered multifamily properties are notoriously hard to detect. To help solve this problem, the Pacific Institute, Bonneville Environmental Foundation (BEF), and Sensor Industries have collaborated with local water agencies to install 2,900 toilet leak sensors across 15 affordable multifamily buildings in California and Arizona. All properties serve qualified low-income residents.

This project is co-funded by corporate contributions and water utility rebates. Corporate contributions came from BlueTriton Brands, Cascade, Cummins, Disney, Ecolab, Google, Hunter Industries, Procter & Gamble, Target, and The Coca-Cola Company. Water conservation incentive rebates were provided through the Metropolitan Water District of Southern California and the Los Angeles Department of Water and Power.

WATER BENEFITS

Corporations are supporting this project as part of their goals to offset their water footprints and contribute to water resilience in the communities they operate in. By funding the installation of toilet leak sensors in multifamily housing, corporations can count a portion of the resulting water savings towards their water saving targets. Preliminary results show that this solution reduces building water use by approximately 10–15% and provides an estimated volumetric benefit of 5,000 gallons per leak sensor per year. These projects can be deployed very swiftly, with the sensor installation and dashboard training process taking about a month. Overall, the project provides 10 years of volumetric benefits.



CO-BENEFITS

In addition to reducing water waste, this project has yielded financial savings and an improvement in housing satisfaction.

Water-efficient practices can lead to financial savings.

This project results in significant savings on water and wastewater bills. In affordable housing, these financial savings can be redirected to other essential services and support.

Water-efficiency improvements engage residents without changing their behavior.

Progress in water sustainability in multifamily housing can be slowed by the challenge of engaging and educating residents who are not directly responsible for paying water bills. This project helps address that challenge as toilet leak sensors do not necessitate changes in daily habits. Additionally, the leak sensor installation process provides an opportunity to engage and educate residents about leak detection.

FUTURE PROSPECTS

The project's co-funding approach has encouraged shared responsibility among partners. The co-funding approach distributes the investment, risk, and decision-making across various stakeholders, which is particularly helpful for testing out new technologies. This strategic use of collaborative financing is a significant innovation in addressing water efficiency challenges. This model can be replicated with other new technologies. For the continuation of this particular project, project collaborators have suggested that an independently sustainable fund would be helpful.

SUMMARY

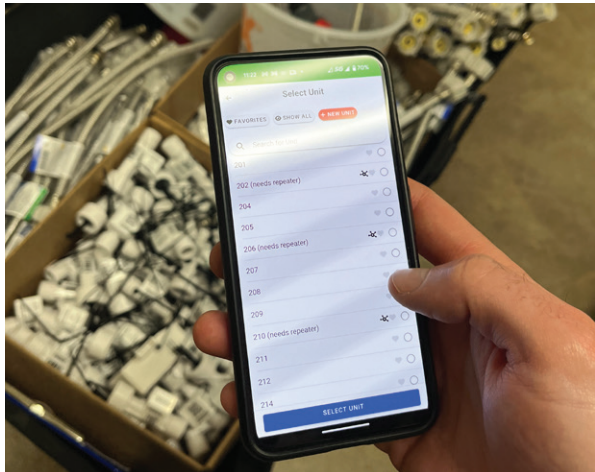
By installing toilet leak sensors in multifamily housing, this project has achieved significant water and monetary savings. The financial savings realized from reduced water waste further underscore the project's value, highlighting the potential for water efficiency measures to contribute to broader affordability goals. This project is open to new funders and implementation partners in Arizona and Southern California.

CONTACT

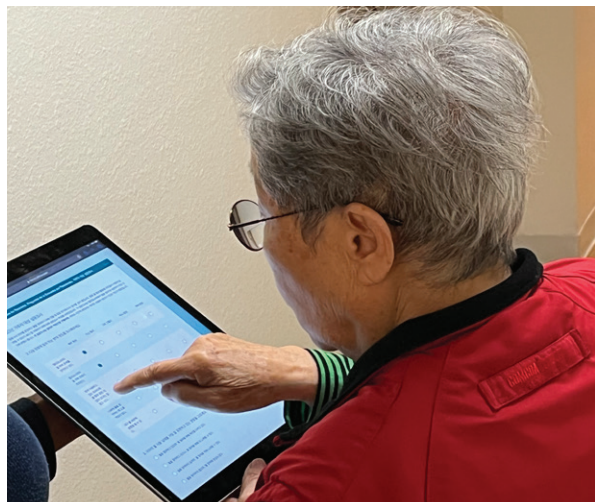
For more information on how to contribute to this endeavor, please reach out to the Pacific Institute at info@pacinst.org.



The installation of the leak sensors. ©Cora Snyder, Pacific Institute.



Connecting the sensors to the online dashboard during the sensor installation. ©Cora Snyder, Pacific Institute.



Surveying the residents about their perspectives on water conservation and efficiency. ©Cora Snyder, Pacific Institute.