

LeakAlertor[®] Wireless PRO Case Study Eliminating Silent Water Waste at The Fairfield Inn & Suites by Marriott

– How LeakAlertor PRO helped uncover real Dollars lost, and how to recover them –



Executive Summary

Challenge

Hotels operate on tight margins, so water wastage is an important issue for revenue management. However, at the Fairfield Inn water bills were rising, the root causes were hidden, and inspections weren't catching them. Hotel staff and maintenance had no reliable visibility into silent toilet leaks or inefficient water usage.

Solution

The LeakAlertor[®] Wireless PRO was installed on all 107 toilets to deliver:

- » Real-time alerts for running toilets, and overflows
- » Maintenance prioritization through smart monitoring
- » Continuous performance data without staff intervention
- » Flush volume analytics and usage trends

After installation James Duncan, GM Fairfield by Marriott, commented, *"We have a pretty good maintenance program, but I had no idea how many undetected toilet problems were occurring on a daily basis ... The biggest shock was the number of running toilets, some of which went undetected for days."*

Objectives

- » Provide a turnkey, easy to install, running and leaking toilet detection system which will detect, alert for, and quantify water waste through toilets to both management and maintenance when water wasting issues occurs.
- » Provide an easy to use and understand Dashboard to access real-time data.
- » Provide text alerts when major water wasting events begin.



IMAGINED HERE
CREATED HERE
MADE HERE

The Results (First 6 Months)

Total Gallons of water loss identified	~306,000
Annualized savings potential	~\$15,000
Average monthly savings	~\$1,300.00
Annualized savings per toilet	\$143.20

Observations/Takeaways

💧 First 6 Months

- » Even with the maintenance team making indicated repairs, water loss in the first *six months, from leaking and running toilets only*, was *>230,000 gallons*, or nearly 40,000 gallons per month.
- » Without the PRO System in place *this loss could have been higher*, as none of the repairs were indicated by a guest.
- » More than *50% of the total water loss identified came from just the top six worst toilets*, out of one hundred seven.
- » ROI on the System for the first year was projected to be between 8-9 months.

💧 30 Day Before/After Repairs Study

- » Even with diligent remediation of leak events and inspection coupled with repairs/adjustments for running toilets, *new events continued to occur* with other toilets on the property.
- » Toilet leaks, i.e., phantom flushes which create the pattern of leak-fill-leak-fill, are most commonly caused by bad flappers. Even when flappers are replaced, some leaks are not corrected, meaning the leak was caused by either some other failure or an improper flapper replacement.

💧 Year-Over-Year Trends

- » Trends indicate running toilets make up a growing proportion of the total water waste on the property *over time*. *Running toilets are unpredictable* as to when they occur. They are also unpredictable as to the duration and volume of a given event, even if multiple events should occur on the same toilet.
- » Running toilets and faulty fill valves (faulty fill valve and equilibrium events) occur more frequently, and with greater water waste per event and average daily loss rates, *then leaking flappers alone*.
- » Water savings gained through remediation of leak events *can quickly be reduced or eliminated by running toilet events*.

A LeakAlertor® Wireless PRO Case Study

Eliminating Silent Water Waste at The Fairfield Inn & Suites by Marriott

– How LeakAlertor PRO helped uncover real dollars lost, and how to recover them –

Property Description

20 year old+ four story hotel with 104 Guest rooms. Full remodel of the hotel took place in spring/summer 2021. Located in suburban Philadelphia with an average occupancy rate over 80%. The site has two full time on-site managers as well as on-site maintenance staff. Water cost is determined by the usage rate for water and sewer combined. The combined water/sewer rate at the property is approximately \$25.00 per 1,000 gallons.

Challenge

As part of the remodel, the hotel wanted to incorporate measures to reduce water waste at the location. They understood leaking toilets increase water usage but had no way of locating or quantifying the loss. They had a maintenance plan to replace flappers annually but did not see the efficiency of that plan. They would instead make repairs after guest complaints indicated where a repair was needed. They did not know the overall scope of water loss nor the duration or volume of water loss of a given event.

Solution

November 2021- Installation of the LeakAlertor Wireless PRO System into all the guest rooms as well as the lobby and employee restrooms, after the hotel remodel was completed. Hotel General Manager was shown how to access and utilize the Dashboard for monitoring leak and running toilet events.

June 2023- The Node's hardware and firmware were updated. with all the original Nodes being replaced. Replacement occurred over two phases at the hotel's request, phase one was completed in June of 2023, with phase two completed February 2024.

August 2024- Introduction of the Work Order Tool into the Dashboard. The Tool generates weekly updates to management/maintenance staff regarding the outstanding issues, which are then sent via email. The Tool provides a single, unified page showing all water wasting events on the property, including the specific toilet and the issue causing the waste, recommended action for correction, with the ability to export the report via email, Excel spreadsheet, or PDF for tracking and reporting purposes. The Tool is also available on the Dashboard for users to generate interim reports.

Text alerts will notify the hotel when a running toilet event starts and stops. If the room is unoccupied staff can enter the room and terminate the event. Leak events are identified on the Dashboard which is accessed through any internet-connected device. All other data is available on the Dashboard.

Dashboard Data Available

The LeakAlertor Wireless Dashboard is comprised of five Tables and five Tools to provide water usage data and analytics to users. All tables and tools are exportable to Excel spreadsheets. Each toilet on the property is uniquely identified, generally the Guest Room number, or other descriptive such as “Men’s Room Left” for the hotel’s lobby restroom as well as the toilet-specific serial number assigned to the Node (the in-tank device.)

There is no limit to the number of users for a given customer, in the case of the Fairfield Inn the users included the General Manager and Assistant Manager.

The Dashboard can be operated independently through its own URL sign-on or seamlessly integrated into property management platforms, such as Smartcon Solutions, to increase operational efficiency.

Cost

Initial Equipment

One (1) Gateway	\$650.00
One Hundred Seven (107) Nodes	\$6995.00
Annual Subscription (Each Node requires a Data Subscription package)	\$2,889.00

Upgrade from GEN-1 to GEN-2 Nodes

No Cost to Property

Results

💧 First six months of monitoring the water losses¹:

Running & leaking toilets	236,964 gallons
Inefficient flush volumes	68,872 gallons
Projected Annualized water loss	611,672 gallons
Projected Annualized Cost of water	\$15,322.00
Projected Annualized Per toilet cost	\$143.20

💧 Annual Water Loss Identified²

1st year Water Loss Identified (11/21/21-11/20/2022)

» 384,919 gallons » Leak Events- 207,666 » Running Toilets- 177,253

2nd year Water Loss Identified (11/21/22- 11/20/23)

» 390,183 gallons » Leak Events- 129,389 » Running Toilets- 260,794

3rd Year Water Loss Identified (11/21/23-11/20/2024)

» 332,317 gallons » Leak Events- 127,969 » Running Toilets-204,348

4th Year Water Loss Identified (Projected³)

» 175,370 gallons » Leak Events- 84,177 » Running Toilets- 281,939

¹Based on data available on the Dashboard Time Range Tool accessed May 2022.

²Based on data available on the Dashboard Time Range Tool accessed 5/15/25.

³Based on Dashboard Time Range Tool data from 11/21/2024-5/15/2025 (date of this study) the six month figures are Total: 175,370, Leak Events 40,321, Running Toilet 135,049. These figures were projected to full year figures.

💧 Water Loss Comparison Pre/Post Repair

After the retrofit of the updated in-tank devices (the Nodes) an A/B study was conducted analyzing the leak/running toilet data 30 days prior and after completing repairs of all outstanding events on September 12, 2024. No adjustments were calculated for inefficient toilets with a gallons per flush usage rate > 4.0 gpf.

💧 30 Days Before Repairs

Leak Events

- » 22 out of 107 toilets had an event
- » 37 distinct events occurred
- » **Total water loss was 25,508 gallons**
- » Average event was 690 gallons at a rate of 53 gallons *per day*

Running Toilet Events

- » 13 out of 107 toilets had at least one event
- » **Total water loss was 16,096 gallons**
- » Average event was 1,150 gallons at a rate of 4.73 gallons *per minute*

💧 30 Days After Repairs

Leak Events

- » 8 out of 107 toilets had an event
- » 19 distinct events occurred
- » **Total water loss was 6,555 gallons**
- » Average event was 596 gallons at a rate of 36 gallons *per day*

Running Toilet Events

- » 11 out of 107 toilets had at least one event
- » **Total water loss was 22,112 gallons**
- » Average event was 1,580 gallons at a rate of 5.2 gallons *per minute*

Contact Us

H2O Connected is a woman-owned, Made in the USA business located in Coatesville, PA. It develops and manufactures water conservation devices under the LeakAlertor® brand, including the LeakAlertor Wireless PRO and LeakAlertor 6000. We have been helping residents, property managers, and hospitality properties detect, identify, and correct water waste through toilets for over fifteen years. If you would like more information about the LeakAlertor Wireless PRO to determine how it can help you lower water costs, decrease labor, and increase your NOI please contact us: