ALERT•LABS

2026 State of Water Management

What 480,000 alerts reveal about water risk, waste, and building resilience across North America

alertlabs.com

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Table of Contents

Water is the most expensive peril hiding in plain sight.

It costs more than fire. It costs more than theft. According to the American Insurance Association, water leaks cause over $10 billion in property losses every year in the United States. The Hartford Insurance company identifies water damage as a leading cause of commercial property losses across all real estate asset classes. And yet, for most buildings, the primary detection method is still a human being noticing a wet floor, or opening a water bill 30 to 90 days after the problem began.

This report presents findings from one of the largest real-world datasets on water events in commercial buildings ever published. It draws on data from the AlertAQ™ water intelligence platform across more than 14,000 commercial buildings in the United States and Canada. These alerts span three categories of water risk: physical water presence (flood detection), abnormal water consumption (flow intelligence), and environmental conditions that threaten building integrity (temperature and humidity monitoring).

In 2025 alone, the AlertAQ™ platform recorded more than 480,000 alerts. Since August 2019, buildings monitored by Alert Labs have avoided over 15 billion gallons of water waste and an estimated 163,000 metric tonnes of CO_2 emissions.

The data tells a story that anyone responsible for the performance, safety, or financial health of a building needs to hear.

Who this report is for

This report is written for professionals who manage, insure, or invest in buildings: facility directors and building engineers who decide where to deploy sensors and how to respond to alerts; project managers who oversee new construction; property managers and asset managers who quantify risk and protect portfolio value; sustainability directors who track water conservation and carbon reduction; and insurance professionals who evaluate loss prevention strategies.

How to read this report

Each chapter presents findings alongside the industry context that gives them meaning. Where relevant, we cite data from insurers, government agencies, and industry associations to establish what “normal” looks like without water intelligence, so the value of early detection is clear.

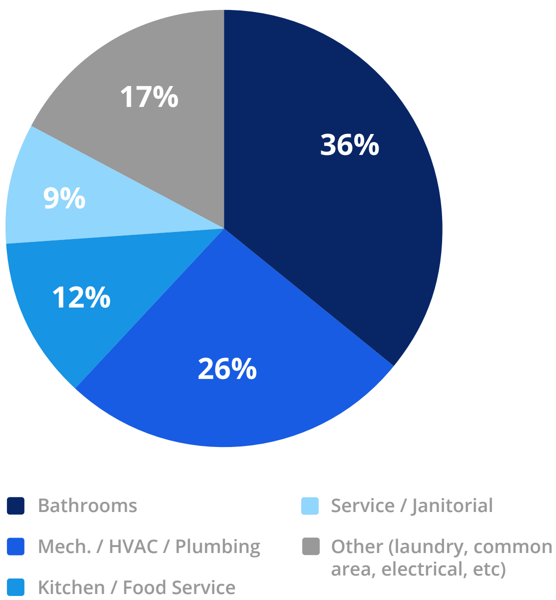
A detailed methodology is provided at the end of this report.

Key findings

The following findings are drawn from a single calendar year: 2025, and come from buildings equipped with Alert Labs sensors in the United States and Canada.

Physical water leak detection — More than 30,000 flood alerts were recorded across thousands of buildings — roughly one in four monitored buildings with Alert Labs leak detection solutions installed experienced at least one flood alert in 2025. Bathrooms account for more than 36% of flood events. Mechanical rooms are second at 26%. Together, these two zones represent over 60% of all floods detected by Alert Labs solutions. The median flood alert was resolved in under one hour, but 56% of all flood events occurred outside core business hours, when buildings are lightly staffed or empty. Without automated detection, these events would go unnoticed until the next morning or the next business day.

Exhibit 1.1 Distribution of flood alerts



Temperature and humidity monitoring — More than 350,000 environmental alerts were recorded across nearly 3,000 buildings. The majority came from occupied spaces in senior living and long-term care facilities, where temperature drifts pose direct health risks to vulnerable residents. More than 1,000 alerts detected below-freezing temperatures near building plumbing, with another 25,000 early-warning alerts catching spaces trending toward freezing before damage occurred. Cold chain alerts — protecting medication and food storage — were resolved in a median of 28 minutes, the fastest response time of any alert category. More than 22,000 high-humidity alerts flagged conditions where mold can begin growing within 24 to 48 hours.

Water flow intelligence — More than 90,000 leak and abnormal water use alerts were recorded across nearly 4,500 buildings. Continuous leaks, such as stuck toilet flappers, running supply lines, and failed valves, account for 94% of all water volume detected, despite representing fewer than half of total alerts. The EPA estimates that a single running toilet can waste 200 gallons per day. AlertAQ™ catches these events in real time, before the waste compounds over weeks or months of unnoticed consumption.

Carbon impact — Every gallon of water that is treated, pumped, heated, and sent down the drain carries an embedded carbon cost. In 2025, AlertAQ™-monitored buildings avoided an estimated 37,500 metric tonnes of CO_2 emissions through early detection of water waste and damage — contributing to Alert Labs' cumulative total of 163,000 metric tonnes of avoided emissions. That is the equivalent of removing more than 8,000 passenger cars from the road for a full year.

Where Water Shows Up & How Fast Buildings Respond

A flood or water leak detection sensor detects the physical presence of water where water should not be. In insurance terms, these are non-weather water damage events — internal leaks, overflows, and pipe failures, not overland flooding. When wet, Alert Labs' Floodie flood sensor and water leak detector triggers an alert and the AlertAQ™ platform notifies the building's designated contacts. Each water leak detector is given a custom name in the AlertAQ™ platform to indicate where it was placed. That placement data, analyzed across more than 30,000 flood alerts, reveals exactly where buildings are most vulnerable to water events.

Where physical leaks happen

Of the flood alerts where sensor placement could be classified, 36% originated in bathrooms, making restrooms the single largest source of detected water events. Mechanical rooms and HVAC spaces account for another 26%. Kitchens and food service areas contribute 12%. Service and janitorial areas add 9%.

For facility managers planning a sensor deployment, the data confirms that restrooms and mechanical rooms should be prioritized — but the long tail matters. Kitchens, service areas, laundry rooms, and electrical rooms each contribute meaningful alert volumes. And multi-floor events — described later on in this chapter — make the case for coverage across floors and zones, not just in the highest-risk rooms.

Exhibit 2.1 Flood alerts by room type (detail)

Room Type	Total	%
Bathroom	9,982	35.9%
Mechanical Room	4,872	17.5%
Kitchen / Food Service	3,324	12.0%
Service / Janitorial	2,472	8.9%
Laundry	1,926	6.9%
Plumbing Infrastructure	1,287	4.6%
Hallway / Common Area	1,181	4.3%
HVAC	977	3.5%
Electrical / Server Room	513	1.8%
Roof / Exterior	345	1.2%
Locker Room	290	1.0%
Residential Unit	245	0.9%
Utility / Storage	176	0.6%
Elevator Area	73	0.3%
Laboratory	53	0.2%
Parking / Loading	37	0.1%
Ceiling / Above Ceiling	31	0.1%

INDUSTRY CONTEXT

According to the Insurance Information Institute, water damage and freezing claims averaged $13,954 per incident between 2018 and 2022. The Hartford reports that water damage is now a leading cause of commercial property losses across all real estate asset classes, and that separate water damage deductibles of $50,000 to $100,000 have become increasingly common in the commercial property market — on top of the building's standard all-other-perils deductible (Risk & Insurance, 2023). Every flood event that goes undetected is a potential five-, six-, or seven-figure claim.

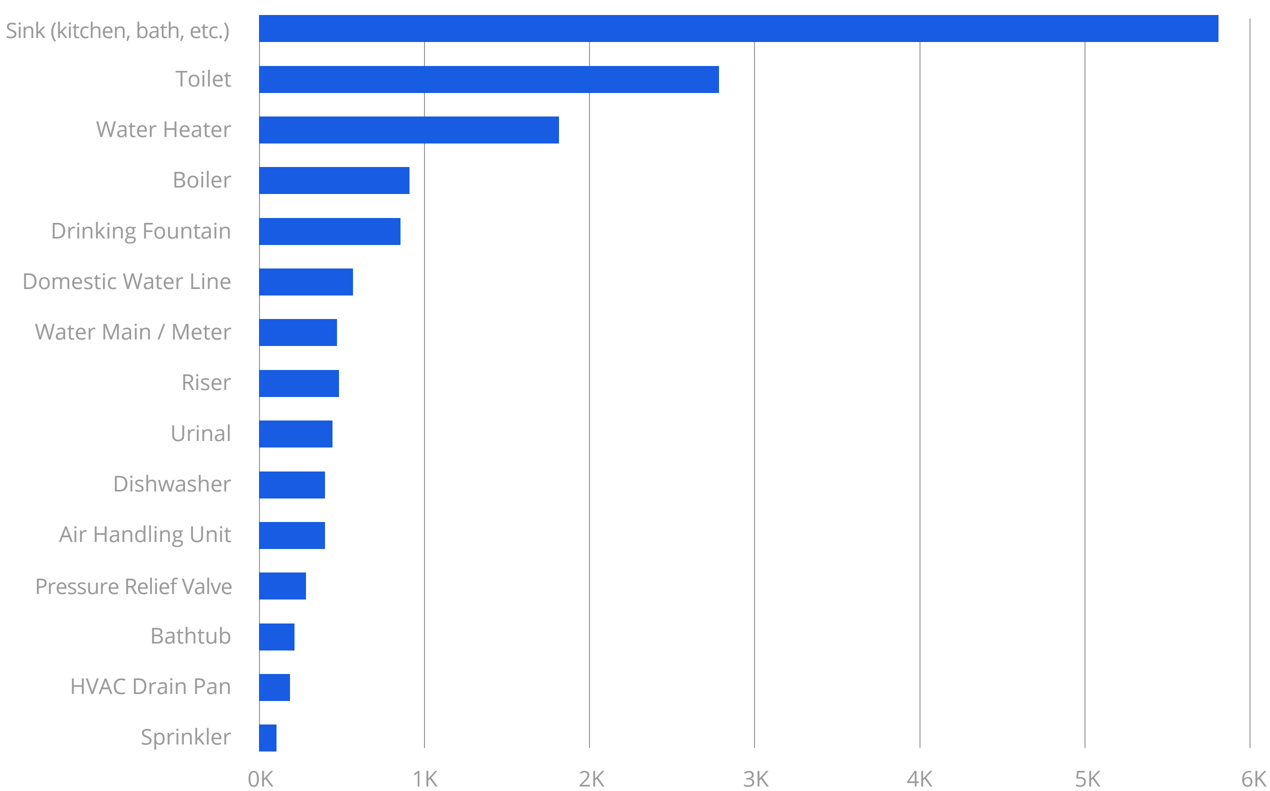
What's leaking

Among alerts where a specific water source could be identified, plumbing fixtures — the things building occupants use every day — account for nearly 60% of all identifiable flood sources. Sinks alone represent 34% of component-level alerts. Toilets add 16%. Water heating equipment — e.g., water heaters and boilers — is a significant second category at 17%.

This tells a story that is both reassuring and sobering. Flood risk is commonplace. It is not confined to catastrophic pipe bursts or rooftop failures. It is the sink that overflows because the drain is clogged. It is the toilet flapper that sticks. It is the water heater that develops a slow drip in a mechanical room nobody visits after 5 PM.

These are the everyday failures that, left undetected, escalate into insurance claims that could have been prevented with early detection.

Exhibit 2.2 Flood alerts by water component



INDUSTRY CONTEXT

McGuire Manufacturing, a plumbing fixture company, reports that toilets are the primary internal cause of water loss in commercial buildings. Our data confirms this: toilets and sinks together account for over half of all component-level flood detections.

Time to resolution

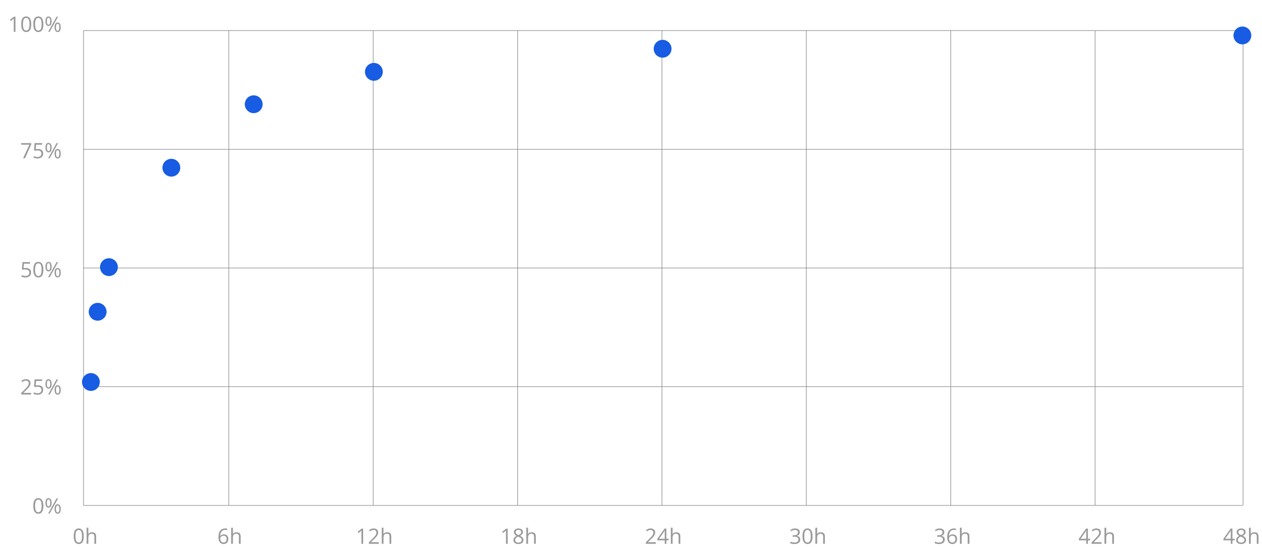
More than half of all alerts were resolved within one hour. Nearly three-quarters were resolved within four hours. By 24 hours, 95% of all flood alerts had been resolved.

The 57-minute median reflects how quickly building staff responded and addressed the issue — not how quickly the technology detected it.

The median flood alert was resolved in **57 minutes**.

It is important to understand what these numbers represent. The resolution time is the gap between when the sensor detected water and when the alert was marked as resolved on the AlertAQ™ platform. The sensor detects water presence instantly.

Exhibit 2.3 How quickly flood alerts are resolved



INDUSTRY CONTEXT

Allianz Global Corporate & Specialty, one of the world's largest commercial insurers, notes that the most damaging water events "often go unnoticed because the release occurs at weekends or when no personnel are present." The Hanover Insurance Group states that water pipe failures in commercial buildings "can go undetected for hours or even days." The question is not whether 57 minutes is fast enough. The question is what happens in buildings with no detection at all. Without automated detection, there is no equivalent benchmark because floods have no recorded start time.

After-hours risk

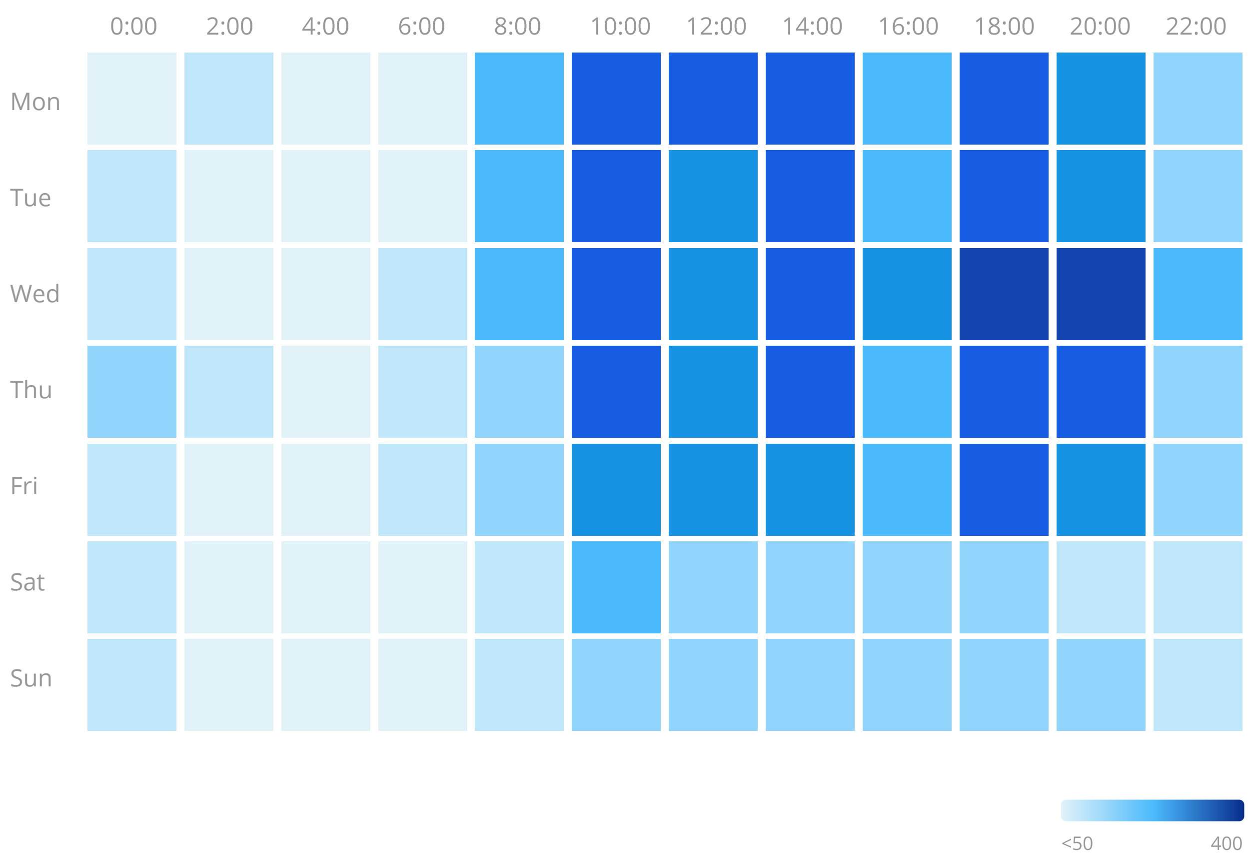
When you define "after-hours" as weekday evenings and overnights plus all of Saturday and Sunday, more than half of all flood events happen when most buildings have reduced or no staff on site.

The single busiest cell in the hour-by-day heatmap is Wednesday at 6 PM. Weekday evenings are nearly as active as weekday daytime hours, but the people who would respond have likely gone home.

56% of flood alerts occur **outside** core business hours.

Weekend volumes, while lower than weekdays, still run at 63% of the weekday average. Floods do not follow business hours. For buildings relying on manual walkthroughs, a flood that starts at 6 PM on a Friday could run undetected until 8 AM Monday — 62 hours of unchecked water damage.

Exhibit 2.4 Flood alerts by hour and day of week



When leaks trigger multiple sensors

In multi-story buildings, a plumbing failure on an upper floor does not stay on that floor. Water follows gravity — through pipe chases, along structural joints, down elevator shafts — affecting every floor below the source.

In 2025, AlertAQ™ recorded more than 1,500 multi-sensor events where two or more sensors in the same building triggered within 60 minutes of each other. Of these, 233 were multi-floor events — sensors on different floors of the same building firing in rapid succession. In 119 of those events, the highest floor triggered first, consistent with top-down water damage events. More than two-thirds of multi-floor events occurred after hours or on weekends.

Multi-floor cascading water events are where the largest insurance claims originate, and they are precisely the events that multi-sensor deployments are designed to catch.

According to The Hartford, 75% of commercial water damage losses stem from plumbing, HVAC systems, and appliances — the same sources that appear throughout this dataset. When one of those failures occurs on an upper floor, gravity does the rest.

1500+
Multi-sensor events
(2+ sensors, same building, <60 min. apart)

474
Buildings involved

233
Multi-floor events *(2+ floors)*

119
Top-down propagation pattern *(highest floor first)*

68%
Multi-floor events after hours / on weekends

FROM THE FIELD

"A Major Flood" — downtown office building

At 9:14 PM on a Thursday, a Floodie flood sensor and water leak detector triggered near a fifth-floor women's washroom toilet. Within minutes, a second sensor in the third-floor janitor's closet fired. The toilet failure on the upper floor sent water flowing two floors down — caught by sensors on both floors before staff arrived the next morning. The building operator stated the alerts prevented a major flood event.

FROM THE FIELD

HVAC cascade — three floors, one clogged drain pan

A clogged drain pan on a 16th-floor HVAC unit sent condensation down through the building. Sensors detected water in the 14th-floor mechanical room, then the 12th-floor mechanical room. Investigation confirmed the 16th-floor drain pan was blocked and condensation had leaked down to both lower floors. Three floors affected by a single clogged drain — caught by sensors before the water reached occupied spaces.

Resolution time by property type

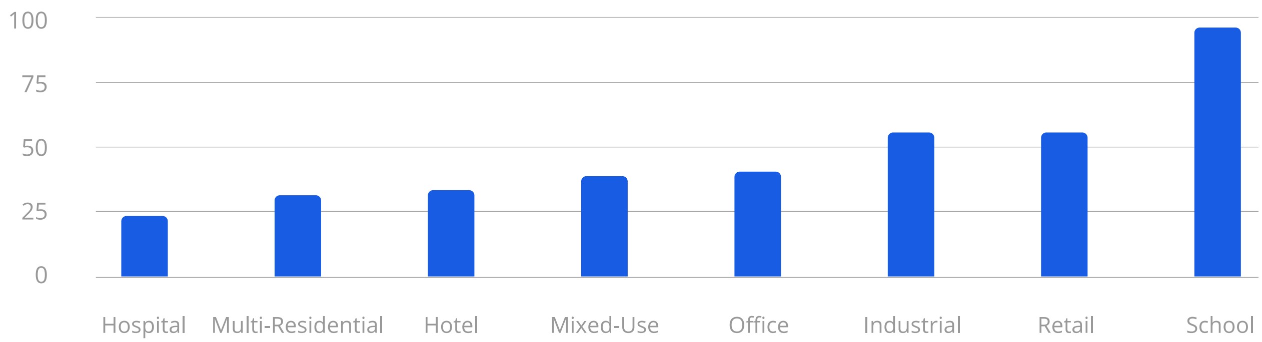
Not all buildings respond at the same speed. Hospitals, with 24/7 facilities teams, resolve flood alerts in a median of 24 minutes. Schools, with limited after-hours staffing, take a median of 96 minutes.

The pattern aligns with different staffing models. Properties with round-the-clock facilities teams, such as hospitals and hotels, respond fastest. Properties that rely on daytime-only or contract maintenance, such as schools and retail stores, are slower. This is a staffing reality that automated detection helps bridge.

From detection to action: automatic shut-off

When a Floodie sensor detects water, AlertAQ™ can trigger an automatic shut-off through Shuttie, Alert Labs' automatic water shut-off valves. This closes the loop from detection to mitigation without waiting for a human response — critical during the 56% of flood events that occur after hours.

Exhibit 2.6 Median time to resolution (TTR) by property type



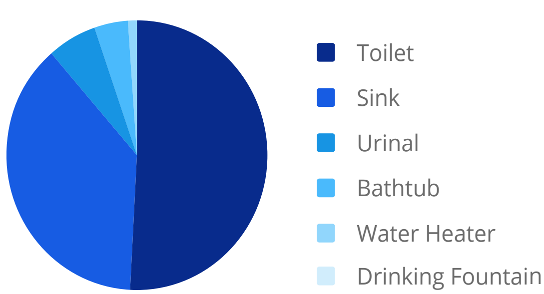
The bathroom deep-dive

Bathrooms generate more flood alerts than any other room type. Within bathrooms, the fixture breakdown tells its own story.

Among bathroom flood alerts where the fixture could be identified, toilets account for 51% and sinks account for 37%. Urinals contribute 6% and bathtubs 4%.

Men's rooms generate more flood alerts than women's rooms — likely reflecting the additional flood vector of urinals, which are exclusive to men's facilities. Gendered washroom data is available, but 44% of bathroom alerts came from sensors whose names did not include words like "men's" or "women's".

Exhibit 2.7 Bathroom fixture breakdown

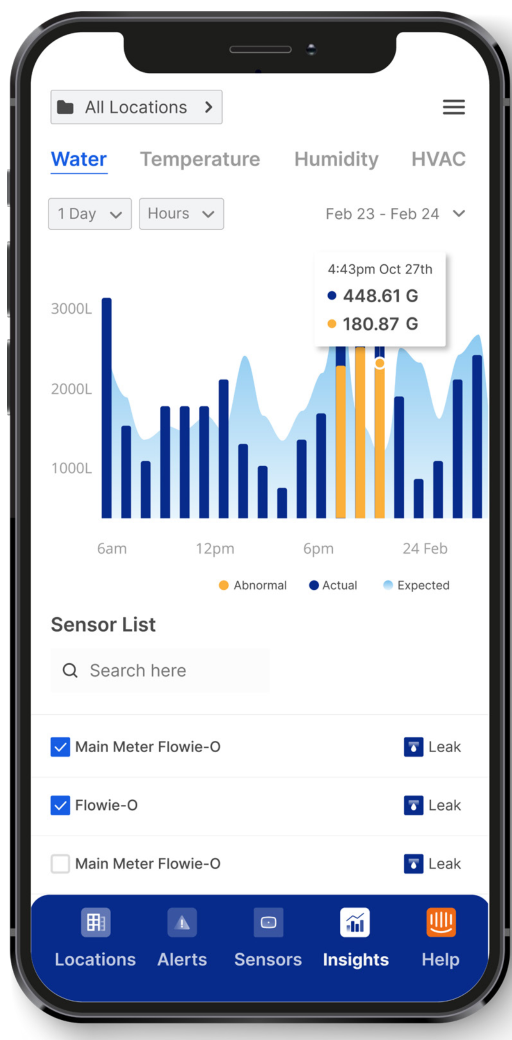


Catching the Leaks Nobody Sees

A flood sensor detects water on the floor. A flow sensor detects water through the pipe. These are fundamentally different problems. Chapter 2 addressed water where it should not be — on a floor, near an electrical panel, pooling in a mechanical room. This chapter addresses water going where it always goes — down the drain — but in volumes that indicate waste.

Alert Labs' Flowie water flow sensors monitor water use at the building meter, measuring consumption minute by minute.

Flowie triggers two types of alerts: leak alerts, which detect continuous flow above a threshold that suggests a supply-side leak, and abnormal high water use alerts, which flag sudden consumption surges above the building's normal pattern.



Two risk profiles: leaks vs. surges

In 2025, AlertAQ™ recorded more than 90,000 water flow alerts across nearly 4,500 buildings: approximately 50,000 abnormal high water use (AHWU) alerts and approximately 44,000 leak alerts.

Different flow rates pose different problems

AHWU alerts are fast and sharp. A cooling tower running longer than expected. An irrigation system that did not shut off. A burst of water use during an event or cleaning cycle. The median AHWU alert lasted about one hour.

Leak alerts can be slow and quiet. A toilet flapper stuck open. A supply line with a hairline crack. A valve that did not fully close. The median leak alert lasted 12 hours.

These two risk profiles require different detection approaches. Surges are often noticed by building occupants — a burst of noise, a visible spike in pressure. Leaks are not. They often run beneath the threshold of human attention, accumulating waste day after day. Despite representing fewer than half of total alerts, leaks account for the overwhelming majority of water volume detected. The quiet, persistent leak is the one that drives up your water bill.

Exhibit 3.1 Leak vs. AHWU — two risk profiles

	Water Leak	Abnormal High Water Use
Share of alerts	47%	53%
Median duration	12 hours	1 hour
Nature	Silent, continuous, persistent	Sudden surge, often visible
Typical cause	Stuck flapper, failed valve, supply line drip	Cooling tower, irrigation, burst event
Share of total water volume	94%	6%

INDUSTRY CONTEXT

The EPA estimates that a single leaking toilet can waste 200 gallons per day. NYC's Department of Environmental Protection puts the figure higher: a continuously running toilet can waste up to 6,000 gallons daily, costing building operators up to $100 in water costs each day. Without real-time flow monitoring, these leaks can persist until the utility bill arrives — typically 30 to 90 days later.

The scale of waste detected

In 2025, AlertAQ™ flagged an estimated 3.4 billion gallons of potential water waste across the portfolio of buildings with Alert Labs sensors installed. That is enough water to fill more than 5,000 Olympic swimming pools. At typical combined water and sewer rates of $8 to $12 per thousand gallons* — based on national averages reported by the EPA and the American Water Works Association — that volume represents an estimated $28 million to $41 million in potential utility costs avoided.

But water waste is not only a billing problem. A leak that runs long enough can eventually become a damage event. A supply line dripping for weeks saturates drywall. A continuously running fixture can overflow. The line between physical water leaks and flow-based water leaks is not a wall — it is a timeline. AlertAQ™ water flow monitoring catches these events while they are still a utility problem, before they become a restoration project.

Exhibit 3.2 Total water savings

3.4 Billion	$28-$41 Million	~5,200
Gallons of water waste prevented	*In potential water cost savings**	*Olympic swimming pools filled*

INDUSTRY CONTEXT

The U.S. Energy Information Administration reports that large commercial buildings use an average of 22,000 gallons of water per day. The Department of Energy estimates that office workers use 8 to 12 gallons per day in restrooms alone. A single stuck toilet flapper wasting 6,000 gallons per day can effectively double a building's restroom water consumption — and no one notices until the bill arrives.

FROM THE FIELD

The stuck flapper

An AHWU alert flagged abnormal overnight water use at a commercial building. Investigation revealed a single toilet flapper stuck open, with water running continuously through the bowl. Total water waste identified: more than 24,000 gallons. Without flow monitoring, that flapper would have continued wasting water 24 hours a day until the next manual inspection or water bill review.

** Source for water cost range: Combined water and sewer rates based on EPA WaterSense national average ($6.06/kgal water only) and AWWA 2024 Rate Survey data showing combined residential rates of ~$15/kgal. The $8–$12 range is conservative for commercial properties, which receive volume discounts but face sewer surcharges.*

Seasonal patterns

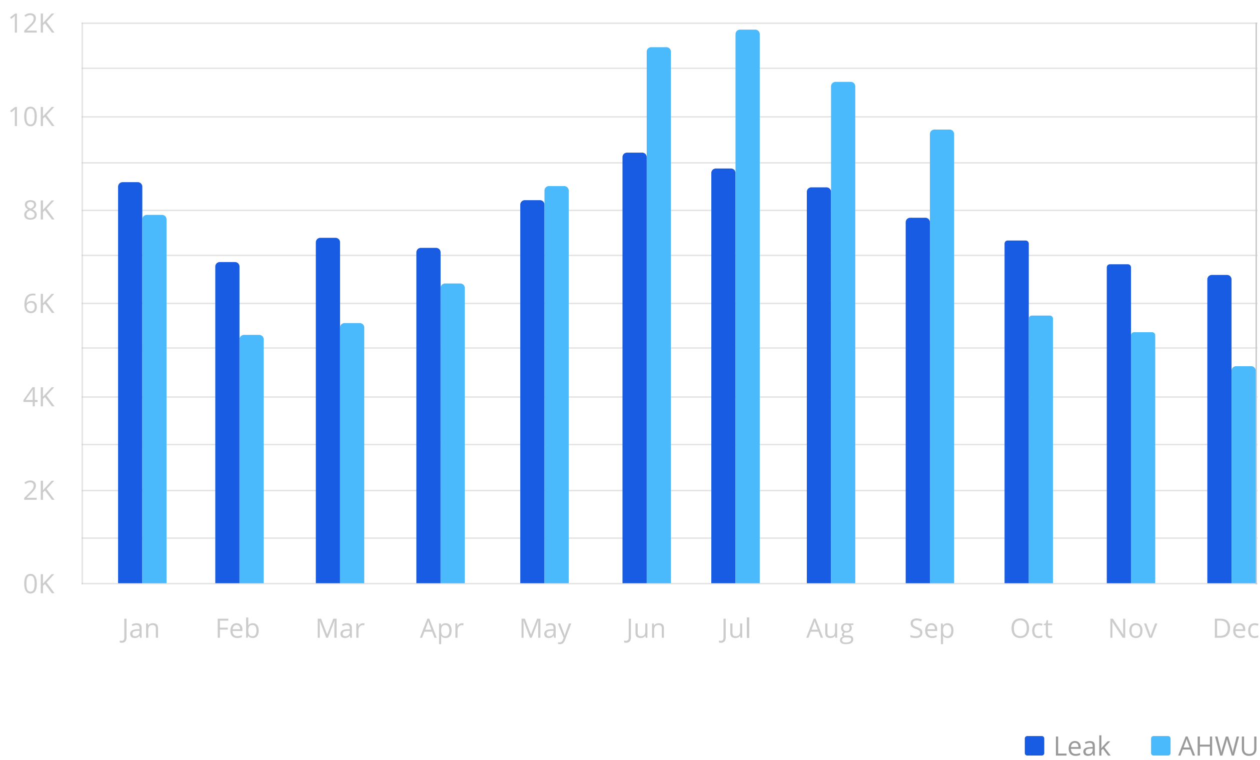
Hotter months (June through August) see 75% more AHWU alerts than winter months, driven by cooling tower operations, irrigation systems, pool filling, and higher building occupancy.

Water flow alerts follow a clear seasonal pattern.

Leak alerts remain relatively stable year-round, reflecting the persistent nature of plumbing failures regardless of season.

For anyone managing a commercial building, this seasonality has practical implications. Summer water bills should be scrutinized more carefully. Irrigation system start-ups are high-risk moments. And cooling tower water use should be benchmarked so that genuine waste can be distinguished from normal seasonal increases.

Exhibit 3.3 Monthly alerts by type



The water-carbon nexus

Every gallon of water carries an embedded carbon cost. Water must be extracted from a source, treated to potable standards, pumped through miles of distribution infrastructure, and often heated at the building level. After use, wastewater must be collected, transported, and treated again before discharge. Each of these steps consumes energy.

When water is wasted the energy behind it is wasted, too.

In 2025, AlertAQ™-monitored buildings avoided an estimated 37,500 metric tonnes of CO_2 emissions through early detection of water waste and flood damage. This contributes to Alert Labs' cumulative total of 163,000 metric tonnes of avoided CO_2 emissions.

For sustainability directors tracking Scope 3 emissions (the indirect emissions embedded in purchased utilities like water and energy) or building-level carbon intensity, water intelligence is not a footnote. It is an operational lever. The Bluefield Research consultancy reports that nearly one in five gallons of treated drinking water in the U.S. is lost before it reaches customers, costing utilities $6.4 billion annually. Inside buildings, AlertAQ™ data shows that the waste continues — unless someone is watching.

> ★ For a deeper look at the hidden costs embedded in every gallon, see Alert Labs' companion white paper, Recognizing the True Value of Water, available at **alertlabs.com**.

Exhibit 3.4 CO_2 equivalency infographic

~37,500
2025 metric tonnes CO_2e avoided (163,000 mt cumulative)

~94,000
tree-years of carbon sequestration

~8,100
passenger cars removed for 1 year

Protecting Buildings, People, and Compliance

Water is not the only threat to a building's integrity. Temperature and humidity — when they drift outside safe ranges — can burst pipes, spoil food and medication, grow mold, damage sensitive equipment, and compromise the comfort and safety of building occupants. Alert Labs' Humie humidity and temperature sensor monitors environmental conditions continuously and alerts building operators when readings cross user-defined thresholds.

In 2025, AlertAQ™ recorded more than 350,000 temperature and humidity alerts across nearly 3,000 buildings.

Where Humie sensors are deployed

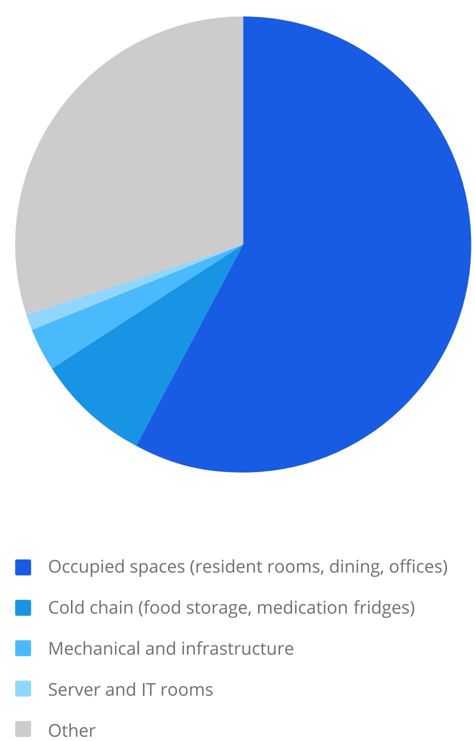
The names building operators assign to each sensor reveal a clear deployment story.

More than half of all temperature and humidity alerts come from occupied spaces.

This includes resident rooms, dining areas, activity rooms, and offices. Another 8% come from cold chain monitoring — food storage and medication refrigerators. The remainder covers mechanical rooms, server rooms, hallways, and other infrastructure.

This distribution reflects the Humie sensor's primary deployment in senior living, long-term care, and multi-residential properties — environments where temperature directly affects the health and comfort of vulnerable populations.

Exhibit 4.1 Sensor placement categories



Resident comfort and safety

The largest share of temperature alerts — more than 150,000 low temperature and 100,000 high-temperature alerts — came from occupied spaces where operators had set comfort-range thresholds in senior living and long-term care facilities.

These alerts protect the health of residents who may be unable to regulate their own environment.

Low-temperature comfort alerts triggered at a median of 71°F (21.5°C) — just below the minimum temperature commonly legislated for long-term care facilities. These alerts flagged living spaces that had likely drifted out of compliance. More than 55,000 of these alerts came from resident or patient rooms specifically, with another 51,000 from dining and common areas. These alerts peaked in summer months, when air conditioning systems can overcool interior spaces.

High-temperature comfort alerts triggered at a median of 79°F (26°C). Again, resident rooms and dining areas accounted for the majority. For elderly residents, sustained indoor temperatures above 78–80°F increase the risk of heat-related illness, dehydration, and falls. These alerts peaked in winter and spring, when heating systems can overshoot.

The median comfort alert was resolved in four hours — typically by adjusting HVAC settings, opening or closing vents, or resetting a thermostat. In a care facility, a room that drifts outside the comfort range is not a minor inconvenience. It is a duty-of-care issue.

In addition to resident comfort, many states have legislative requirements for workplace conditions. Ensuring working environments are compliant is essential to avoiding fines and keeping workers safe.

Freeze risk: the $27,000 peril

Not all below-freezing readings mean the same thing. A medication fridge operating at 28°F (−2°C) is doing its job. A mechanical room dropping below 32°F (0°C) near an exposed water line is a pipe burst waiting to happen. To tell these stories accurately, the data separates building infrastructure freeze risk from cold chain monitoring.

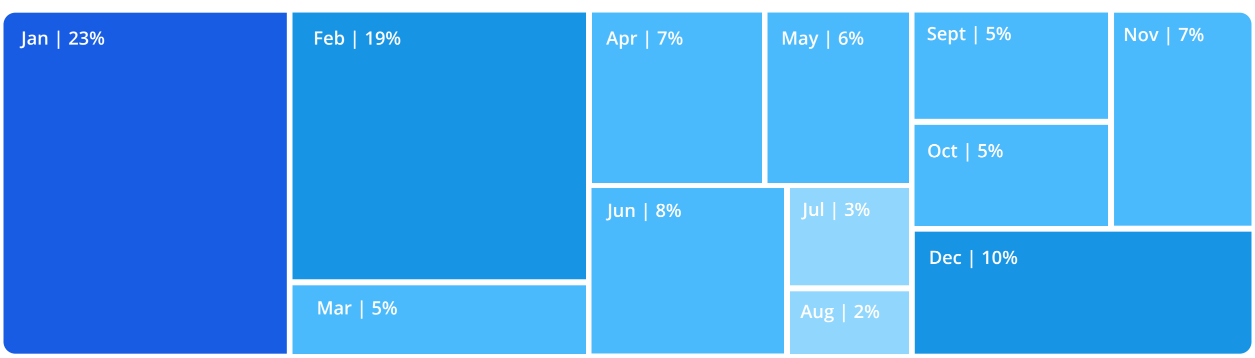
26,000 alerts stood between normal operations and a potential burst pipe.

More than 25,000 early-warning alerts between 32°F and 50°F (0°C to 10°C), plus more than 1,000 alerts at or below freezing, were recorded by AlertAQ™ in 2025. The early-warning alerts — triggered at a median of 40°F (4.5°C) — are the ones that prevent damage.

They tell building operators that a space is trending toward freezing before a pipe bursts, not after. The below-freezing alerts confirm that the risk materialized and immediate action was needed.

The urgency is justified. Philadelphia Insurance Companies studied 433 burst pipe claims and found that the average loss was $27,000 — with the worst claim reaching $1.7 million. In their most catastrophic case, a sprinkler pipe burst on the top floor of a 19-story building, damaging approximately 200 units below it.

Exhibit 4.2 Building freeze-risk alerts by month (boxes sized by share of annual freeze-risk alerts)



But the insurance cost is only part of the story. Many commercial property policies require that building operators maintain heat at a minimum temperature — typically 55°F (13°C) — as a condition of coverage. If a building's temperature drops below that threshold and a pipe bursts, the insurer may deny the claim on the grounds that the operator failed to take reasonable precautions. Continuous temperature monitoring does not just detect freeze risk. It provides a documented record that heat was maintained, protecting the operator's insurability.

Freeze-risk alerts peak sharply in December through February, as expected. But they also appear in shoulder months — in mechanical rooms near fresh air intakes, in poorly insulated pipe chases, and in buildings where HVAC systems cycle off overnight. For building operators, this means freeze risk monitoring is a year-round responsibility, not just a winter precaution.

INDUSTRY CONTEXT

Data center outages cost between $300,000 and $750,000 on average, according to the Ponemon Institute. For any building with on-premise IT infrastructure, a temperature sensor in the server room is not a luxury. It is a necessary cost-avoidance measure.

FROM THE FIELD

The resident who turned off the heat

In a long-term care facility, a temperature sensor in a resident's room triggered at 40°F (4.5°C) — near freezing. Staff investigated and found that the resident had turned off their own heat. Security turned the temperature back on and management sent a building-wide reminder to all residents. In a care facility housing vulnerable individuals, a single room dropping to near-freezing is a health emergency. It was resolved in 27 minutes.

FROM THE FIELD

The boiler room at minus 22

A sensor in a mechanical room triggered at 38°F (3.5°C). Outside temperatures had dropped to −22°F (−30°C) overnight, and the sensor was positioned near a floor drain close to a fresh air intake vent for the boiler's combustion system. The overall space temperatures were adequate, but the sensor detected localized cold temperatures near plumbing infrastructure — exactly the kind of spot where a pipe freeze would start. Resolved in five hours, before any damage occurred.

Extreme heat and equipment protection

On the other end of the spectrum, more than 17,000 high-temperature alerts triggered above 104°F (40°C) — conditions that can degrade mechanical equipment, shorten asset life, and in server environments trigger costly downtime. Boiler rooms, furnace areas, and HVAC closets are the most common locations for high-temperature alerts, which were resolved in a median of two hours.

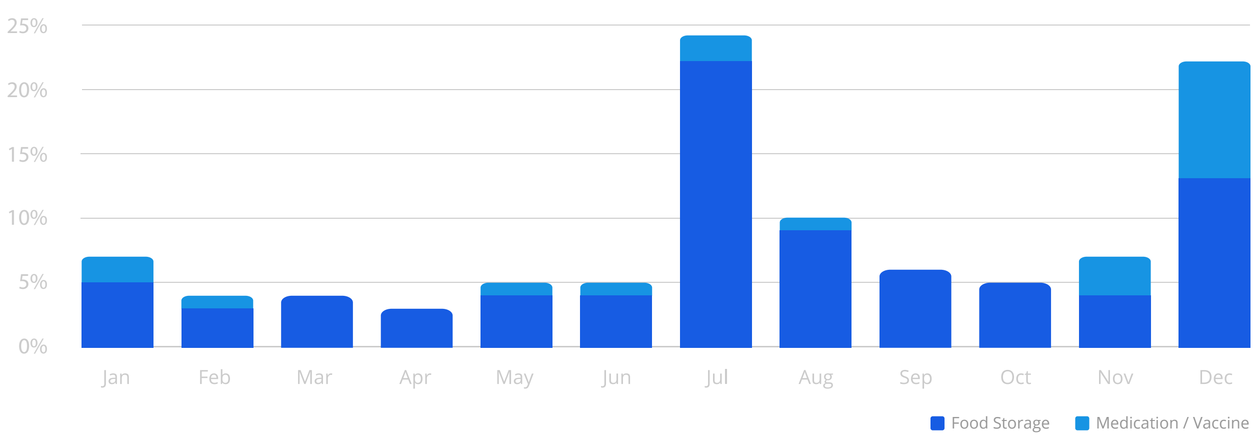
Cold chain monitoring: protecting what's inside the fridge

Temperature sensors serve a fundamentally different purpose in many buildings: monitoring refrigeration equipment. Nearly 9,000 low-temperature alerts came from sensors placed in food storage units and medication refrigerators — a year-round monitoring function unrelated to weather or building heating systems. These cold chain alerts were resolved in a median of just 28 minutes — the fastest response time of any alert category in this report.

The CDC requires that medication be stored between 36°F and 46°F (2°C to 8°C). A temperature variance outside this range — even briefly — can compromise medication efficacy, require expensive replacement, and potentially trigger regulatory consequences.

For food service facilities, food storage monitoring is equally critical. A walk-in cooler that drifts above safe temperatures can spoil inventory worth thousands of dollars and create health risks for residents.

Exhibit 4.3 Share of cold chain monitoring alerts by month



FROM THE FIELD

The medication fridge

A sensor in a medication fridge triggered a low-temperature alert at 35°F (1.5°C) — just below the safe medication storage range. Staff investigated and found that the temperature probe had been displaced while restocking medication. They readjusted the probe and confirmed medication integrity. Resolved in under one hour. Without continuous monitoring, the temperature variance might have gone unnoticed until the next manual temperature check — by which point the medication could have been compromised.

Humidity: from indoor air quality to mold prevention

Like temperature, humidity alerts protect both people and property — and the data makes it possible to see both stories.

Occupant health and comfort

Nearly 5,700 high-humidity alerts and more than 2,000 low-humidity alerts came from occupied spaces — resident rooms, dining areas, and common areas. For residents of senior living and long-term care facilities, sustained high humidity creates respiratory stress and increases infection risk. Sustained low humidity — which peaked in winter at a median trigger of 19% — dries mucous membranes, aggravates respiratory conditions, and can cause skin cracking.

The EPA recommends maintaining indoor relative humidity between 30% and 50%.

Below 30%, occupants experience respiratory discomfort and static discharge can damage electronics. Above 60%, mold can begin colonizing surfaces within 24 to 48 hours.

Mold prevention

In 2025, AlertAQ™ recorded more than 22,000 high-humidity alerts at a median trigger of 82% relative humidity — well into the mold risk zone. These alerts peaked sharply in summer, when HVAC condensation and outdoor moisture load are highest. June through August accounted for 59% of all high-humidity alerts.

Exhibit 4.4 High humidity alerts by month

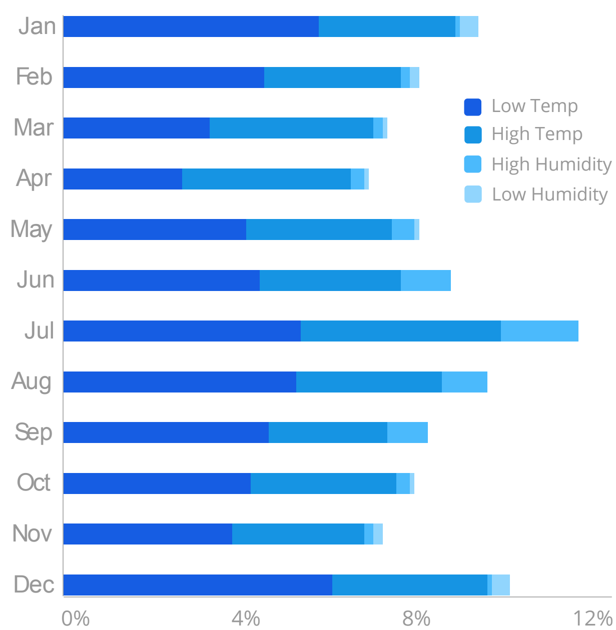
Jan	1%	**May**	7%	**Sept**	14%
Feb	3%	**Jun**	17%	**Oct**	5%
Mar	3%	**Jul**	26%	**Nov**	3%
Apr	4%	**Aug**	15%	**Dec**	2%

The 82% median reflects the thresholds operators have chosen — they are alerting when humidity reaches a level that demands immediate action. With a median resolution of two hours, operators addressed these conditions well before the 24-to-48-hour window in which mold can establish. The economic stakes are significant: mold remediation in the U.S. averages $2,300 per incident, and mold-related infections carry an estimated $5.6 billion annual economic impact.

For buildings with server rooms and IT infrastructure, humidity monitoring serves a separate purpose. More than 700 high-humidity alerts came from server and IT rooms, where elevated moisture can corrode electronics and trigger equipment failures.

Low-humidity alerts followed the opposite seasonal pattern, peaking in winter when heated indoor air dries out. While less dramatic than mold risk, sustained low humidity compromises indoor air quality and can damage building materials.

Exhibit 4.5 All event types by month



Conclusion

More than 480,000 times in 2025, AlertAQ™ told a building operator something they would not have known otherwise — that a toilet was overflowing on the fifth floor at 9 PM, that a water heater had been leaking for hours in an unoccupied mechanical room, that a mechanical room was approaching freezing, that humidity had climbed into the mold-risk zone.

Without that information, those events play out differently. The toilet overflows all night. The stuck flapper wastes thousands of gallons before the next water bill. The pipe freezes and bursts over the weekend. Mold starts growing.

Water intelligence does not eliminate water events. Pipes will fail, toilets will overflow, temperatures will fluctuate. What changes is the gap between when the problem starts and when someone knows about it. This report is a measure of that gap — and the value of closing it.

For more information about Alert Labs' water intelligence solutions, visit **alertlabs.com.**

METHODOLOGY

Data scope

This report is based on alert data recorded by the AlertAQ™ water intelligence platform between January 1 and December 31, 2025. The dataset includes:

- More than 30,000 flood detection alerts (Floodie sensors) across 3,653 buildings
- More than 90,000 water flow alerts (Flowie sensors) across 4,498 buildings, comprising approximately 44,000 leak alerts and 50,000 abnormal high water use alerts
- More than 350,000 temperature and humidity alerts (Humie sensors) across 2,955 buildings

Buildings are located throughout the United States and Canada. The building portfolio includes multi-residential, hotel, office, school, hospital, industrial, retail, mixed-use, and other commercial property types.

Sensor name classification

The names building operators and installers assign to flood sensors were classified into room type, water component, and other fields using a rules-based parser developed for this project. The parser applied text normalization, abbreviation expansion, multilingual term recognition (English and French), structured code decoding, and same-building contextual inference.

Of 32,110 flood alerts, 88.1% yielded a room and/or component classification. Room type was classified for 86.5% of alerts. Water component was classified for 51.4%. The unclassified remainder consists of sensor names that contain no extractable location or component information.

Temperature and humidity sensor names were classified into placement categories using keyword matching, yielding a 70% classification rate. These names more commonly use room numbers or generic labels reflecting the conventions of senior living and long-term care facilities, rather than the specific location and fixture descriptions that professional installers typically assign to flood sensors.

Time to resolution

Time to resolution (TTR) is defined as the elapsed time between when AlertAQ™ recorded the alert start time and when the alert was marked as resolved on the platform. TTR reflects both human response time and the duration of the underlying condition. It does not represent sensor detection time.

Water savings methodology

Water savings figures represent the estimated volume of water that would have been wasted if each detected leak or abnormal water use event had continued unmonitored for a defined period of time. Without continuous flow monitoring, most building operators discover water waste through periodic billing review — a cycle that typically spans 30 to 90 days. The water savings estimates in this report are based on proprietary AlertAQ™ models that account for flow rates, duration, and detection timing.

CO2 emissions methodology

CO2 equivalent (CO2e) savings are derived from the water savings figures using regional emission factors that account for the energy required to extract, treat, distribute, heat, and dispose of water. The 2025 total of approximately 37,500 metric tonnes contributes to Alert Labs' cumulative total of 163,000 metric tonnes of avoided CO2 emissions.

Rounding and precision

Headline figures in the body of this report are rounded for readability (for example, "more than 30,000 flood alerts" rather than 32,110). Exact figures are provided in exhibit footnotes and in this methodology section. Percentages and ratios are reported at their calculated precision.

Limitations

This report reflects the buildings and sensors in the AlertAQ™ platform during 2025 that experienced an event. It is not a random sample of all commercial buildings. The findings reflect where Alert Labs customers have chosen to deploy sensors, which introduces selection bias — buildings with sensors are, by definition, buildings whose operators have already invested in water intelligence.

Sensor placement data is dependent on the amount of detail in the sensor names provided by building operators at installation. Classification coverage is high but not complete. Same-building context and metadata were used to improve classification accuracy where possible, but some sensor names remain unclassifiable.

Water savings figures are modeled estimates, not directly measured volumes. They represent the counterfactual: "what would have happened without detection." While the models are grounded in flow rate data and industry benchmarks for typical discovery timelines, they should be understood as estimates.

Exhibit reference table

Exhibit	Description	N	Chapter
1.1	Flood alerts by room type	27,784 of 32,110	1
2.1	Flood alerts by room type (detail)	27,784 of 32,110	2
2.2	Flood alerts by water component	16,495 of 32,110	2
2.3	Cumulative resolution curve	32,110	2
2.4	Hour × day-of-week heatmap	32,110	2
2.5	Multi-sensor event summary	1,535 events from 32,110 alerts	2
2.6	Median TTR by property type	6,483 of 32,110	2
2.7	Bathroom fixture breakdown	5,312 of 9,982 bathroom alerts	2
3.1	Leak vs. AHWU comparison	93,423	3
3.2	Total water savings	93,423	3
3.3	Monthly alerts by type	93,423	3
3.4	CO2 equivalency infographic	Flood, leak, and AHWU alerts	3
4.1	Sensor placement categories	~250,000 of 359,032	4
4.2	Building freeze-risk alerts by month	1,077 (excl. cold chain)	4
4.3	Cold chain monitoring alerts by month	8,772	4
4.4	High humidity alerts by month	22,981 of 359,032	4
4.5	All event types by month	359,032	4

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