BUYER'S GUIDE

Water Monitoring & Conservation

Slash Your Water Bills and Supercharge Your Sustainability

CONNECTED SENSORS

Are You Pouring Your Profits Down the Drain?

Imagine a bustling multi-family building where residents go about their daily routines while a hidden menace lurks beneath the surface. An undetected water leak has been steadily siphoning water for weeks, causing water bills to skyrocket and damage to undermine the building's infrastructure.

Despite their best efforts, the landlord can't pinpoint the source of the leak. It's become an ongoing challenge they can't seem to resolve, resulting in significant water waste, financial burden and a detrimental impact on sustainability. However, in the face of this unexpected calamity, landlords and property managers can be proactive architects of smart water management.

In this buyer's guide, we'll explore the many benefits of water monitoring systems and delve into the crucial considerations underpinning your choice, all while considering the tangible return on investment (ROI) and cost-effectiveness of such systems for your property.

Understanding Water Waste

In our quest to combat water waste effectively, we must comprehensively understand the various factors that contribute to it. Here are typical culprits:

Leaky Fixtures and Pipes

Leaky faucets, toilets, and pipes are some of the most prominent contributors to water waste. Even seemingly minor, unnoticed leaks can accumulate over time, resulting in significant water wastage.

Inefficient Plumbing Systems

Outdated or poorly designed plumbing systems can lead to inefficiencies in water distribution. This may manifest as leaks, issues with water pressure regulation, or uneven water distribution throughout the property.

Excessive Irrigation

Overwatering landscaping and lawns, especially in arid regions, is a common source of water waste. Inefficient irrigation systems, the lack of timers for automated watering, and inadequate maintenance practices can exacerbate this issue.

Unaddressed Maintenance Issues

Failing to promptly address and repair malfunctioning plumbing fixtures and systems can gradually increase water waste. Neglecting routine maintenance can result in more extensive and costly leaks.

Lack of Water-Saving Fixtures

Some commercial buildings still rely on outdated, non-water-efficient fixtures such as toilets, urinals, and faucets. These fixtures consume more water than their modern, low-flow counterparts, contributing significantly to water waste.

Tenant Negligence

In some instances, building tenants may lack awareness of water-saving practices or not promptly report leaks and other issues. This lack of engagement can prolong water wastage and hinder conservation efforts.

Wasteful Practices

Certain businesses engage in practices that needlessly wastewater. Examples include continuously running water for cleaning purposes, using excessive water in industrial processes, and failing to adopt water-efficient practices where feasible.

Climate and Weather Variability

Extreme weather conditions like droughts or heavy rains can lead to water waste if buildings lack adaptable systems.
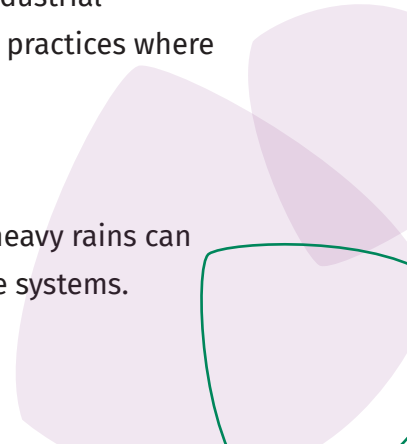
Key Components

1. Smart Water Flow Meter

2. Smart Leak Detection Sensor

3. Automated Logic

4. AI-Driven Data Platform

5. Robust Network Infrastructure

What is a Water Monitoring System?

A water monitoring system is a comprehensive solution designed to help you efficiently manage and reduce water consumption across your property portfolio. Comprising a well-coordinated set of essential components, it continuously tracks and analyzes water usage patterns in your buildings to provide real-time insights that empower you to proactively manage your water usage, prevent costly leaks and inefficiencies and reduce your environmental footprint.

Smart Water Flow Meter

A Smart Water Flow Meter is an advanced device designed to measure and monitor water flow accurately. It provides real-time insights into water consumption, flow rates, and usage patterns. It enables users to remotely access and analyze data, detect leaks, and make informed decisions for efficient water management and risk mitigation.

Water Monkey

The Water Monkey provides real-time insights into water consumption and leak detection.

- ✓ Compatible with most meter makes and models
- ✓ Integrates with existing infrastructure
- ✓ Easy to install - No wiring or pipe cutting
- ✓ Adaptive AI monitoring
- ✓ Real-time email, SMS, & telegram alerts
- ✓ Day, time, and volume threshold alerts
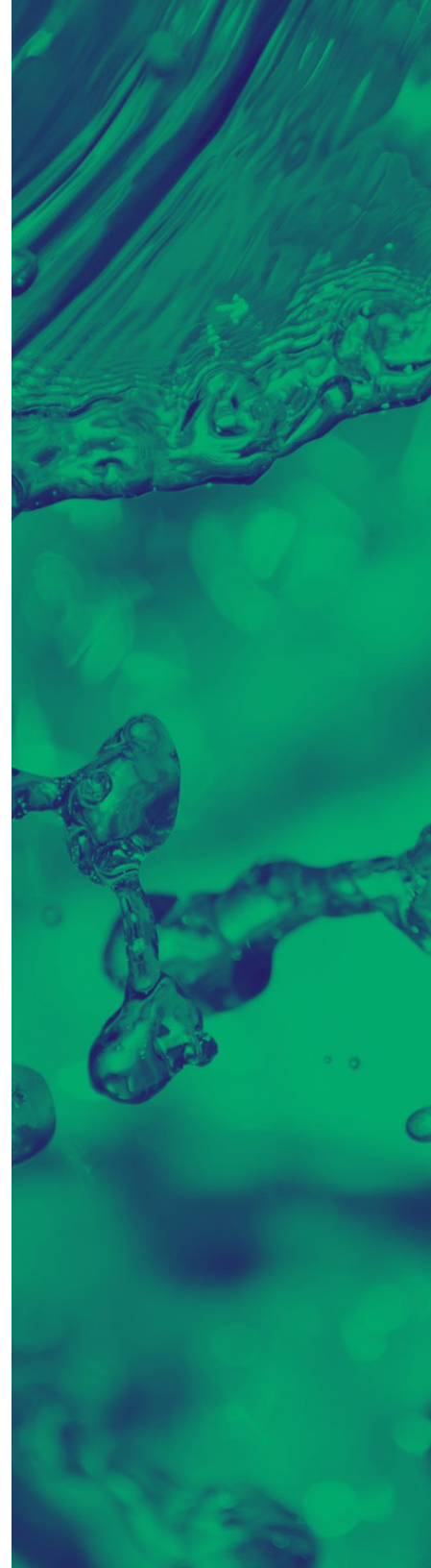
Smart Water Leak Detection Sensor

A Smart Water Leak Detection Sensor is an advanced device designed to identify water leaks. It provides granular litre-by-litre insights into water usage to help detect burst pipes, leaks, and irregular consumption at the source. It also enables users to set up instant alerts about unusual usage patterns and leaks to empower you to take immediate action.


ODEUS

ODEUS is a point-of-use clamp-on smart water leak detection sensor that offers unprecedented insights into your water usage

- ✓ Always-on active water detection
- ✓ AI and machine learning analytics
- ✓ Waterproof enclosure (IP54)
- ✓ No plumbing / electrical technician required
- ✓ Compatible with various pipe sizes and materials
- ✓ Operates over LoRaWAN backed by LTE
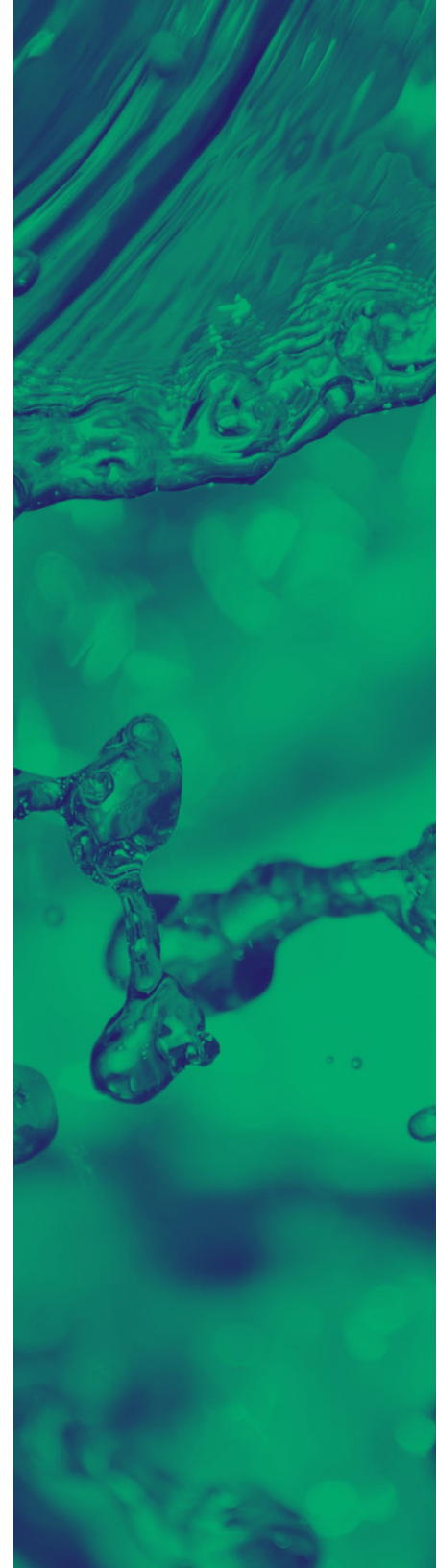- ✓ Bluetooth Low Energy (BLE)
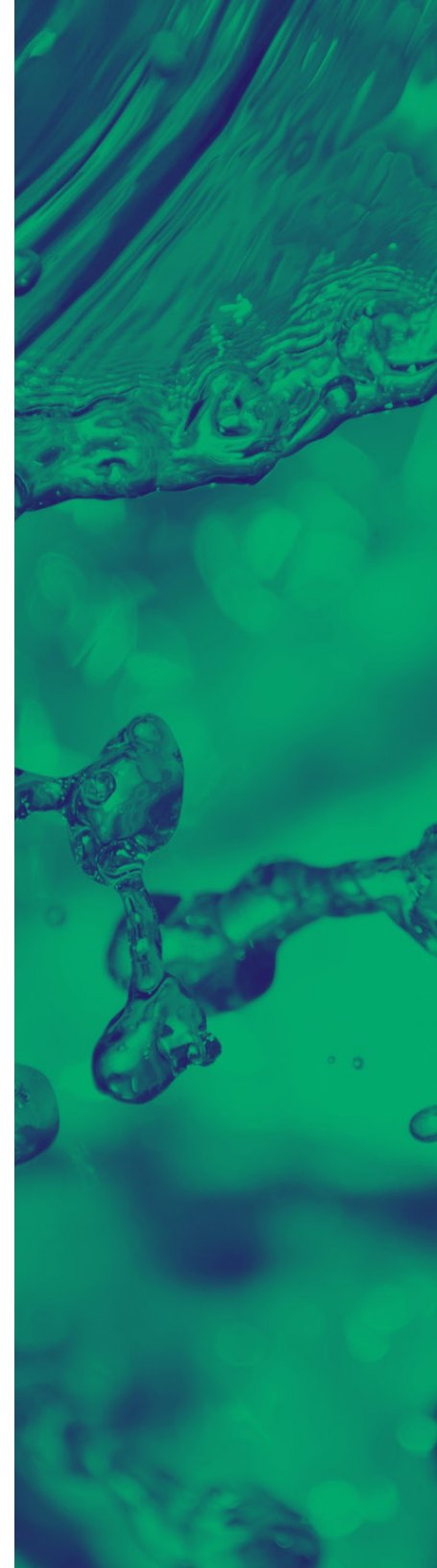
Automatic Logic

Automated logic refers to the water monitoring system's intelligent programming and decision-making capabilities. It involves algorithms and rules dictating how the system responds to sensor inputs and events. Automated logic ensures that the system can take immediate and appropriate actions, such as sending alerts without human intervention when a potential leak is detected.
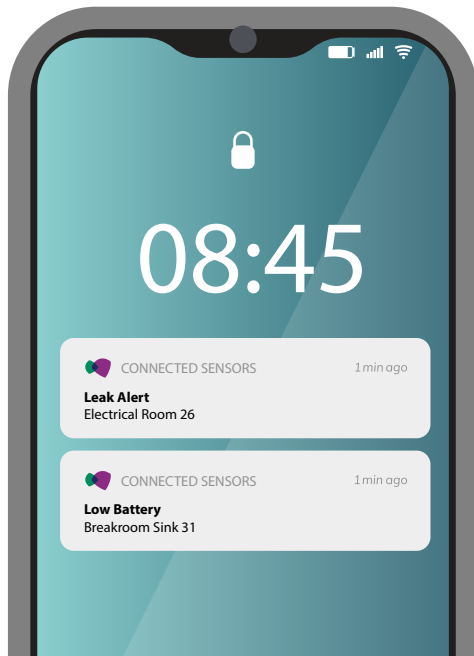
Connected Sensors Automatic Logic

Respond to events before costly water waste occurs

- ✓ Early warning alerts
- ✓ Customizable thresholds
- ✓ Automatic logging

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08:45

CONNECTED SENSORS   1 min ago
Leak Alert
Electrical Room 26

CONNECTED SENSORS   1 min ago
Low Battery
Breakroom Sink 31

AI-Driven Platform

An AI-driven data platform is a sophisticated software component that processes, analyzes, and interprets data from smart sensors, and other system components. It employs artificial intelligence and machine learning algorithms to identify patterns, anomalies, and potential risks. This platform can provide predictive insights, helping property managers and owners make informed decisions to prevent water waste and optimize system performance proactively.
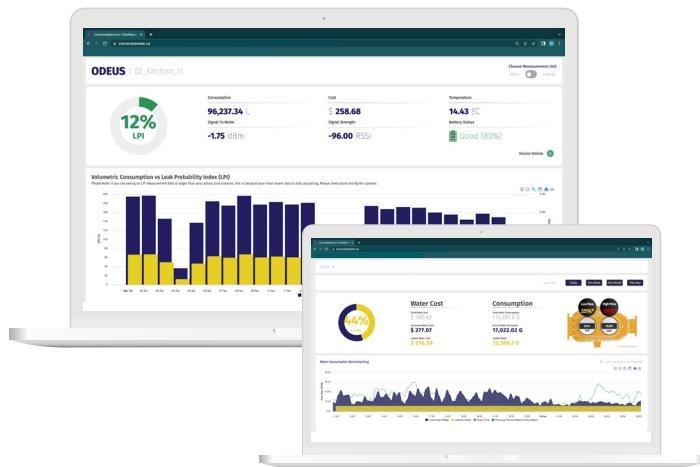
Connected Sensors Dashboard

Round-the-clock monitoring and powerful analytics.

- Real-time monitoring
- Leak probability indexing
- Cost and consumption overview
- Water usage benchmarking
- Per unit analysis
- Unified sensor insights

Robust Network Infrastructure

A robust network infrastructure forms the backbone of the water monitoring system. It includes networking hardware, such as gateways and antennas and communication protocols, to ensure seamless connectivity between all system components. A reliable network infrastructure is essential for real-time data transmission, remote control, and system reliability. Redundancy and failover mechanisms are incorporated to enhance system resilience.

Mikrotik Gateway

An out-of-the-box IoT Gateway and robust antenna for powerful and reliable long-range connectivity.

- ✔ All-in-one: LoRa, CAT-M/NB, 2.4 GHz wireless, Bluetooth
- ✔ Omni-directional antenna
- ✔ 2x 100 Mbps Ethernet Ports
- ✔ 5V MicroUSB In
- ✔ Supports 8 different channels, Listen Before Talk (LBT), and spectral scan features
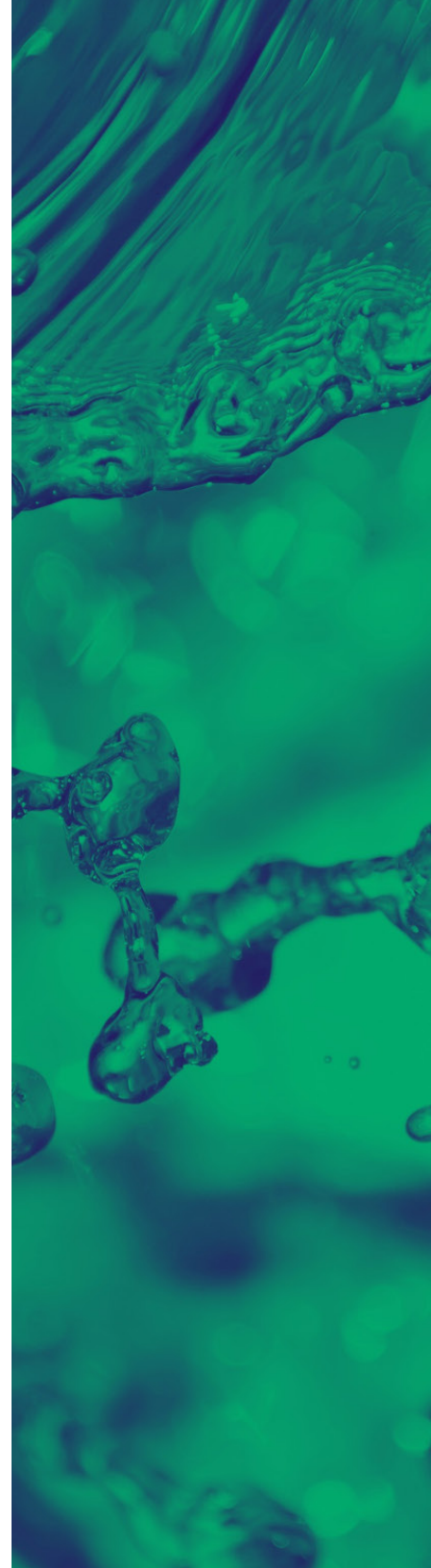
How Much Does a Water Monitoring System Cost?

A water monitoring system is a significant investment comparable to buying a vehicle. In a market filled with options, prices can vary widely.

Think of it like purchasing a car. You can start with a basic package at around $20,000, but as you add extra features and options, the price can easily exceed $40,000. Why do people often opt for these extras when buying a vehicle? The answer is simple: they recognize the value of getting everything right from the beginning, avoiding the need for costly modifications later. They prioritize quality, durability, and convenience, and these principles are equally applicable to a water monitoring system.

Your water monitoring system isn't just a one-time purchase; it's an ongoing partner. It diligently provides you with essential water usage insights and property protection every minute of every day for the foreseeable future. Therefore, ensuring maximum value and minimal maintenance from your investment is paramount.

Unfortunately, some individuals and companies prioritize the system's initial cost, seeking the cheapest vendor. In doing so, they often compromise on low maintenance, quality, and warranty. These decisions can lead to regrets later on, especially considering that, unlike cars, you cannot simply trade in your water monitoring system.

To simplify the system selection process and provide effective guidance, we have categorized projects into three main segments: Good, Better, and Best – to help you identify where the true value lies.

Good: The "Good" water monitoring system provides fundamental insights into water usage, but it may not address all potential monitoring needs.

Better: The "Better" system offers an effective level of monitoring at the riser level. It strikes a balance between cost and coverage, providing enhanced insights for your water management needs.

Best: The "Best" system offers comprehensive coverage at the unit level and the highest level of data accuracy. It provides granular visibility, peace of mind, and eliminates the potential for water inefficiencies and leaks.

What Option Works Best for You

	Good	Better	Best
Water Monkey	✅	✅	✅
ODEUS		✅ (Water Risers)	✅ (Unit Level)

Expected Hardware Cost "The System"

Based on the average cost of a Flood Prevention System for a 100-unit Multi-Residential Property over five years.

	Good	Better	Best
Cost	$2,500	$15,000	$150,000

How Installation Effects Cost

When someone inquires how much our Water Monitoring System costs, the extent of installation is also a key factor. For example, we offer our customers four different packages. Unlike most companies, we will do as much or as little as our customers would prefer to have us do. This flexibility leads to less stress and more savings for the customer.

The installation packages are as follows with their corresponding price ranges:

Option 1: Self-Install (DIY)

This package includes the system and features to be shipped directly to the property. With our self-install program, the property manager or building owner is responsible for all labour involved with the project, including deploying the sensors, setting up the gateways, commissioning the sensors on the platform, installing electrical outlets as required, etc.

Although installing a Water Monitoring System is not very complex, it requires attention to detail and a small margin for error. We recommend self-install for larger companies with facility managers and subject matter experts on staff who can be dedicated to installing such solutions.

*The average company can expect to **spend 5-10%** of the system's value on a self-install, based on the scope of the project and the options that come with it.*

Option 2: Pre-Configured Install

This package includes the system and features to be shipped directly to the property, the sensors to be preconfigured on top of our dashboard, and locations already labelled and ready for your team to install.

The property manager or building owner is responsible for the labour involved with the project, including deploying the sensors and gateways, contracting out the installation of electrical outlets as required, etc.

*The average company can expect to **spend 10 – 15%** of the value of the system on a pre-configured install based on the scope of the project and the options that come with it.*

Option 3: Connected Sensors Tech Install

This package includes the system and features to be shipped directly to the property; the sensors to be preconfigured on top of our dashboard; the locations to be pre-assigned, labelled and ready; and the sensors gateways ready to be installed by our team of experts or contractors.

The property manager or building owner is responsible for the labour and parts cost of 3rd party contractors, such as the electricians and the plumber for outlets and valves.

*The average company can expect to **spend 15 – 20%** of the system's value on a Connected Sensors Tech install, based on the scope of the project and the options that come with it.*

Option 4: Turn-Key Install

Many managers would prefer to work with one company instead of many. We at Connected Sensors are one of the few companies that will offer our clients accurate "turnkey" installations. This package includes everything found in package #3 and the electrical and mechanical costs associated with the project.

*The average company can expect to **spend 20 – 30%** of the system's value on a Turn-Key install, based on the scope of the project and the options that come with it.*

What is the ROI of a Water Monitoring System

ROI of a Water Monitoring System

Water monitoring is a multifaceted financial strategy that delivers a detailed and positive impact on a property's financial outlook and long-term value.

Reduced Water Bills

Consider this scenario: At any given moment, one in five toilets leaks. Now, let's examine a typical multi-residential building with 300 toilets installed. If we apply this statistic, it means that at any given time, 20% of these toilets are leaking, amounting to a staggering 60 toilets in constant disrepair.

Each moderate toilet leak has the potential to squander a substantial 6,000 gallons of water per month. When we consider water prices, for example, in Toronto, which are $0.01395781 per gallon, this translates to a monthly cost of $84 per leaking toilet. In the context of our sample building, where we have 60 toilets experiencing leaks, this equates to a significant monthly loss of $5,024.

The financial impact becomes even more evident when we extend this calculation over a year.

A whopping $60,297 is lost annually due to toilet leaks in our sample multi-residential building.

Water monitoring and leak detection systems are crucial in reducing water waste by identifying inefficient infrastructure and potential leaks that might go unnoticed for extended periods.

This proactive approach ensures that every drop of water is accounted for and used efficiently, leading to substantial savings on water bills.

Increase in Property Value & Financial Leverage

The correlation between reduced water bills and increased property value holds significant relevance.

Let's expand on the above example:

Let us assume that you own a property that annually pulls in $200,000 in revenue and incurs $100,000 in operating expenses. In this circumstance, it will have a

ROI of a Water Monitoring System

resulting NOI of $100,000. With a capitalization rate of 4%, the building's initial market value is 2,500,000.

If the building implements the water-saving measures above that save $60,297 annually, this would increase the NOI to $160,297 and increase the market value to $4,007,425, leading to $1,504,425 in asset value appreciation.

This higher property value also equates to an additional $1,130,568 in financial leverage that a property owner could use to refinance the property at its new value, obtain a loan with more favorable terms, or secure additional funds. This cash can then be reinvested into the property for long-term capital improvements, used to purchase additional properties, or deployed into other ventures, diversifying income sources and spreading risk. The extra leverage also means property owners can negotiate better interest rates with lenders due to the lower loan-to-value ratio, which reflects a more secure investment for the lender.

Overall, water monitoring and conservation initiatives

unlock strategic financial opportunities that can significantly strengthen a property's market standing and profitability.

Higher Tenant Attraction & Retention

Efficient water management practices resonate with environmentally conscious tenants who prioritize sustainable living options. Water monitoring systems convey that the property owner or manager is responsible for resource management. Tenants who value eco-friendly properties are more likely to stay longer, reducing turnover-related expenses, such as advertising, unit make-ready costs, and tenant screening. Furthermore, sustainable practices can enable property owners to command higher rental rates, thereby augmenting rental income and, in turn, NOI. According to REITs, green-certified buildings can translate into a 31% increase in sales values, 23% higher occupancy rates and an 8% increase in rental incomes.
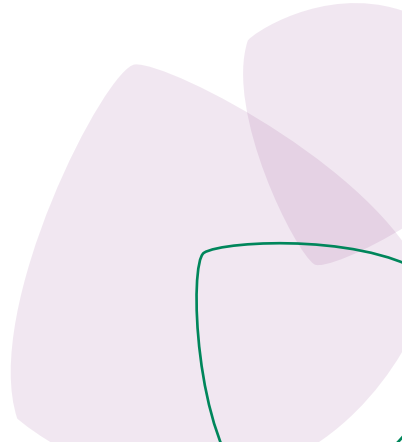
ROI of a Water Monitoring System

Opportunities for Grants, Tax Incentives & Rebates

Companies and property owners in many regions can tap into various financial incentives and support programs to promote sustainability, including water conservation measures. These initiatives encompass grants, rebates, and tax incentives that help offset the costs of adopting eco-friendly technologies and practices. Utility-sponsored programs, offering reduced rates and credits, encourage water-saving efforts, leading to cost savings and sustainability benefits. This financial support reduces upfront investment expenses and enhances businesses' and properties' long-term financial performance and environmental responsibility.

Final Thoughts

In property management, water monitoring and leak detection systems are indispensable tools for safeguarding your investments, conserving precious resources, and enhancing sustainability. The hidden threats of water leaks and inefficient water management can lead to substantial financial losses, damage to infrastructure, and environmental harm. However, landlords and property managers can become architects of intelligent water management by embracing proactive strategies and adopting state-of-the-art technology.

Contact the Connected Sensors team if you're ready to take the next step in proactive smart water management.

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