Itron

Connecting
Every Drop

Smart Water Solutions | **North America**
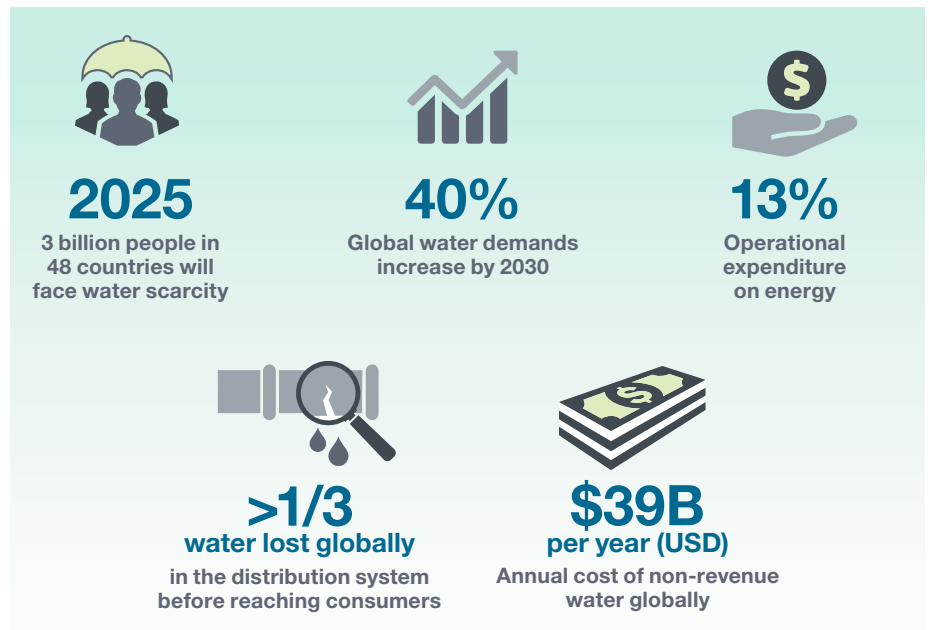
INTRODUCTION

More than ever, utilities are challenged in managing their aging water distribution networks. Everything from reducing costs and implementing conservation programs to dealing with unbilled consumption, physical losses and new regulations—all of which impact the ability to effectively serve consumers. You need a trusted partner to help implement smart water solutions—cost-effective solutions that can scale and grow with your requirements today and into the future.

At Itron, we deliver modern solutions for an industry in transition—we know what you are up against. We have the deep industry expertise to help you solve your current problems, with the vision and technological leadership to outfit you to meet the challenges of tomorrow.

The Itron Advantage

With decades of industry expertise and continuous investments in innovation, we have developed the industry's most comprehensive and proven portfolio of advanced devices, intelligent, foundational networks, and software and services. Together, they deliver the right outcomes

INDUSTRY CHALLENGES

2025
3 billion people in 48 countries will face water scarcity

40%
Global water demands increase by 2030

13%
Operational expenditure on energy

>1/3
water lost globally
in the distribution system before reaching consumers

$39B
per year (USD)
Annual cost of non-revenue water globally

for utilities and cities as we continue our work with you to create a more resourceful world by *connecting every drop*.

We provide operational excellence. Our smart water solutions deliver measurable results that reduce your water losses and

improve operational efficiency. Gain visibility into your water distribution network and/or district metering areas (DMAs) and optimize efficiency using our solutions to run a more resourceful water system—all while improving your consumer experience.
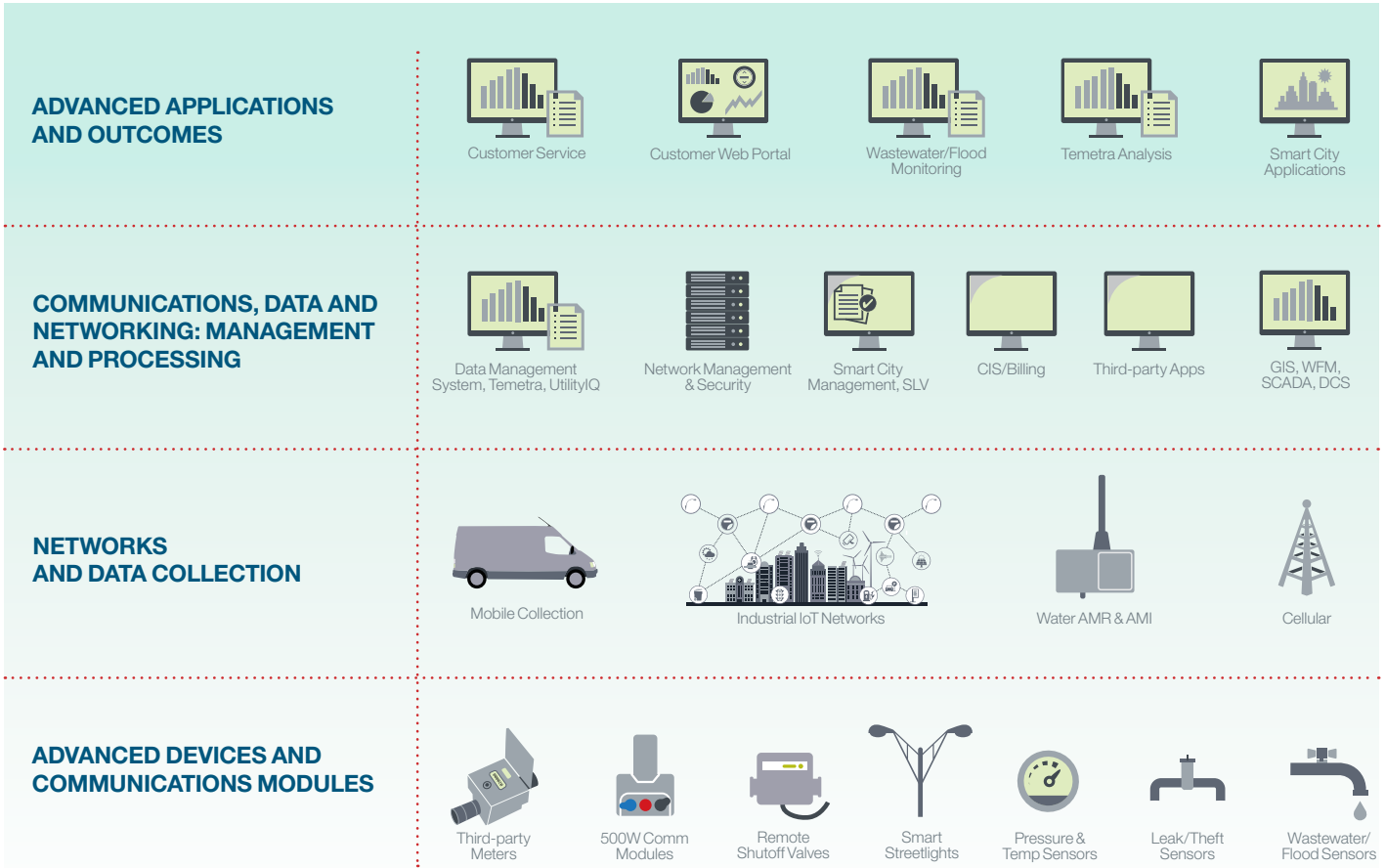
SMART WATER SOLUTIONS

We have a leading portfolio of smart water solutions that leverage:

» Expertise to help you optimize your operations, improve consumer satisfaction and manage your business while complying with regulatory mandates.

» Scalable, comprehensive solutions that pair advanced metering technology with a secure, reliable network and water analytics to drive efficiencies, predict and prevent problems and outages.

» Experienced consultants who help identify inefficiencies and provide cost-effective solutions—and who take complete responsibility and ownership of the results.

» An array of deployment and management options, from utility-owned and operated infrastructure to our world-class managed solutions.

» An open, interoperable platform that provides the ability to deliver multiple applications and services.

ITRON SOLUTIONS FOR WATER MEASUREMENT AND MANAGEMENT

ADVANCED APPLICATIONS AND OUTCOMES

Customer Service | Customer Web Portal | Wastewater/Flood Monitoring | Temetra Analysis | Smart City Applications

COMMUNICATIONS, DATA AND NETWORKING: MANAGEMENT AND PROCESSING

Data Management System, Temetra, UtilityIQ | Network Management & Security | Smart City Management, SLV | CIS/Billing | Third-party Apps | GIS, WFM, SCADA, DCS

NETWORKS AND DATA COLLECTION

Mobile Collection | Industrial IoT Networks | Water AMR & AMI | Cellular

ADVANCED DEVICES AND COMMUNICATIONS MODULES

Third-party Meters | 500W Comm Modules | Remote Shutoff Valves | Smart Streetlights | Pressure & Temp Sensors | Leak/Theft Sensors | Wastewater/ Flood Sensors

Benefits Gained Using Itron Smart Water Solutions

Improve operational visibility and efficiency

Realize data-driven decisions and insights

Respond intelligently to incidents

Reduce non-revenue water (real and apparent losses)

Improve asset management

Improve sustainability and water conservation

Comply with regulatory mandates

Improve consumer engagement

ADVANCED APPLICATIONS AND OUTCOMES

Temetra Analysis

Optimize and efficiently manage water distribution networks

Water distribution systems face several challenges such as aging infrastructure, extreme environmental conditions and inefficient operations. In addition, other challenges include impending regulatory and societal pressure to deliver a constant supply of fresh drinking water to consumers.

Financially and resource constrained, you straddle a fine line between the need to constantly deliver water, while maintaining the integrity of your pipeline infrastructure.

Our Temetra Analysis offering delivers measurable results that address non-revenue water losses in your water distribution system. It can extend the full potential of AMI solutions by providing innovative data analysis to help cities and utilities achieve their business and operations goals.
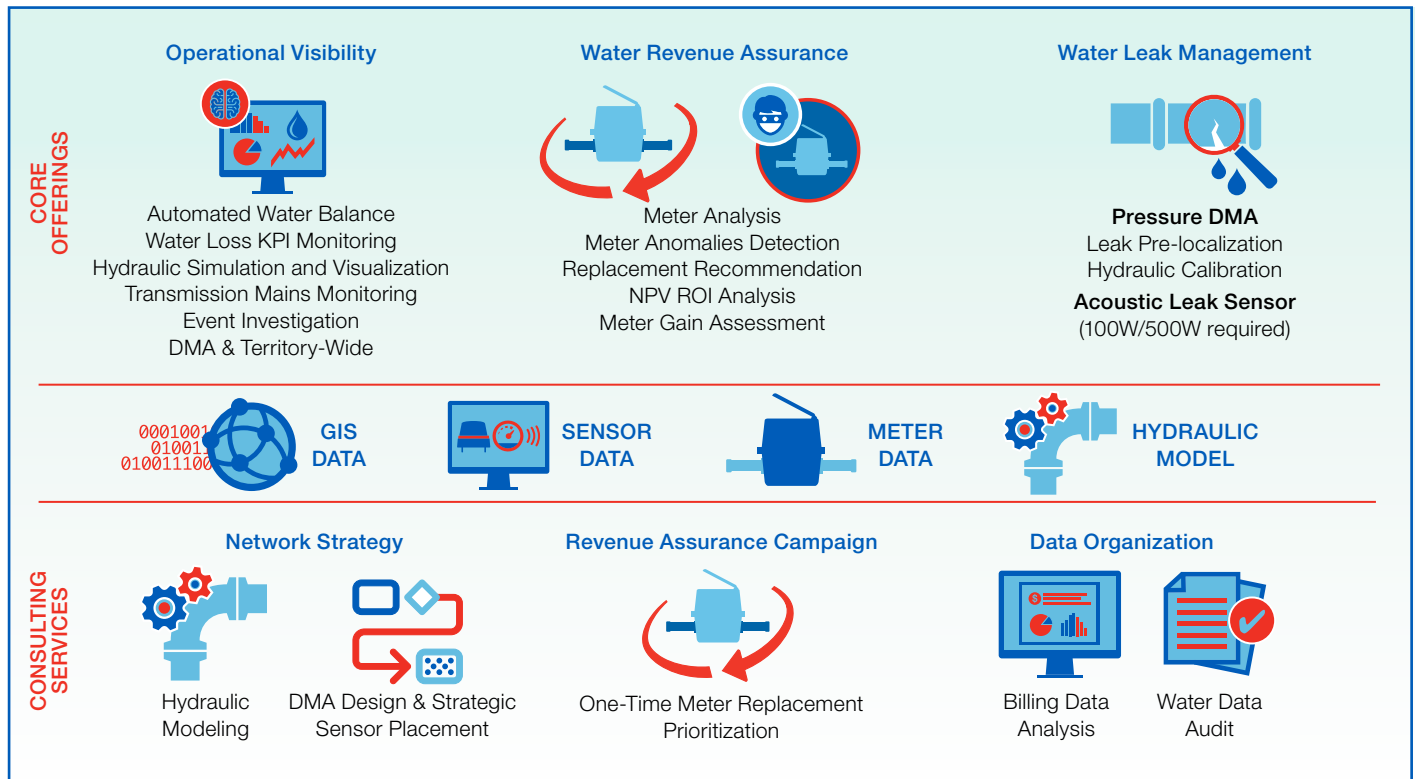
As an end-to-end solution provider, Itron integrates data from many sources, such as network metering endpoints, SCADA, GIS,

hydraulic modeling and CIS systems. This provides water utilities with a centralized holistic view of their water distribution network. Temetra Analysis provides scalable, high-performance analytical tools that turn your data into actionable insights.

Event investigation helps you prioritize and focus your resources on specific areas where your water distribution network performance is in need of action. It works seamlessly with other Itron solutions to help transform your water distribution network into a smart water network.

Our goal is to develop a long-standing working relationship with you. No matter how far down the road you are in terms of managing non-revenue water, we provide sustainable solutions to help meet your needs. Providing pay-for-performance or SaaS-based offerings allows you to engage with us with little-to-no upfront financing.

TEMETRA ANALYSIS OFFERINGS

CORE OFFERINGS

Operational Visibility

Automated Water Balance
Water Loss KPI Monitoring
Hydraulic Simulation and Visualization
Transmission Mains Monitoring
Event Investigation
DMA & Territory-Wide

Water Revenue Assurance

Meter Analysis
Meter Anomalies Detection
Replacement Recommendation
NPV ROI Analysis
Meter Gain Assessment

Water Leak Management

Pressure DMA
Leak Pre-localization
Hydraulic Calibration
Acoustic Leak Sensor
(100W/500W required)

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GIS DATA

SENSOR DATA

METER DATA

HYDRAULIC MODEL

CONSULTING SERVICES

Network Strategy

Hydraulic Modeling

DMA Design & Strategic Sensor Placement

Revenue Assurance Campaign

One-Time Meter Replacement Prioritization

Data Organization

Billing Data Analysis

Water Data Audit

NORTH AMERICA

Real loss reduction using connected devices and leak detection.

Solution overview:

» Installed comms modules on meters and leak sensors

» Fixed wireless network with Optimized Leak Sensor (OLS) and comms modules

» Implemented District Metering Analysis

System overview:

» 18,000 water endpoints

» 10,700 leak sensors

» 36 DMAs across transmission and distribution system

Results:

» Over 1,500 GPM of service link leaks found

» Average of 11 service line leaks found per month ranging from 0.5 – 30 GPM with 10.5 GPM average
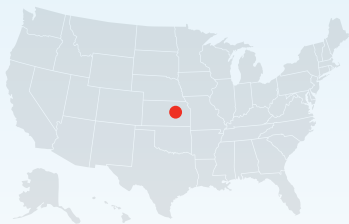
REDUCE REAL AND APPARENT LOSSES

Reducing water loss—whether real or apparent—is another outcome Itron provides. Itron helps you tackle these challenges several different ways, including Water Revenue Assurance and Water Leak Management.

Water Revenue Assurance

Water Revenue Assurance is a program that aims to increase your utility's revenue by performing a detailed multi-criteria analysis of your deployed meter base and your current and historical consumption data. It assesses your meter population by accounting for historical consumption for each connection, and it publishes results that show historical losses and current monthly recurring losses (financial and physical) for individual connections. This gives you a full picture of potential apparent losses within your deployed meter population.

Water Leak Management

Water Leak Management is a critical component of any water distribution network management program that detects and tracks pipe leaks and bursts within your utility distribution network, allowing you to reduce water loss, minimize damage to infrastructure, and improve customer satisfaction.

Wherever you are in your journey to reduce non-revenue water, we are here to help.
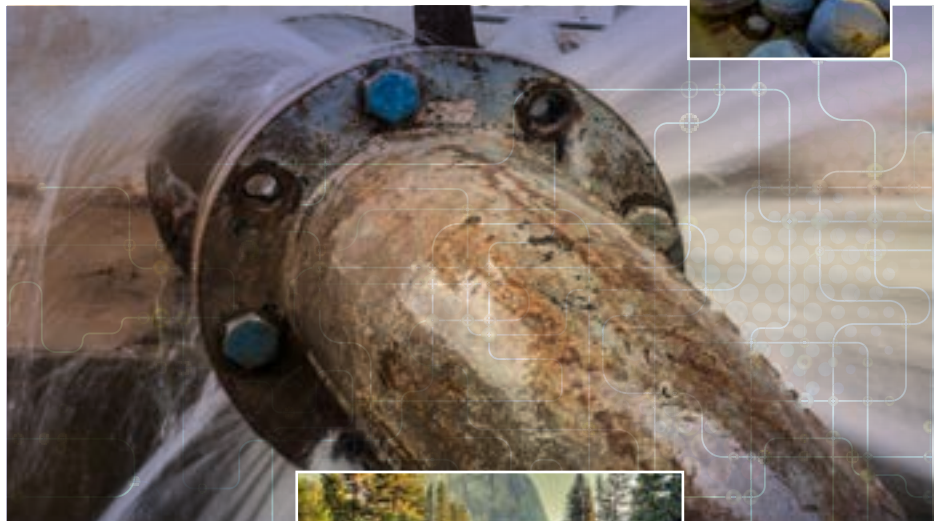
COMMUNICATIONS, DATA AND NETWORKING: MANAGEMENT AND PROCESSING

Delivering Intelligent Connectivity

Communication networks form the fabric that connects all critical infrastructure systems in a unified platform, enabling you to reimagine how your utility or community delivers services to improve efficiencies, achieve sustainability goals, create economic opportunities and enhance quality of life for consumers or citizens.

Itron delivers intelligent connectivity to unlock the value of the Industrial Internet of Things (IIoT). Our flexible platform utilizes a variety of communication technologies from traditional AMI fixed networks to radio frequency (RF) mesh, cellular and Wi-Fi to balance the stringent and competing demands of ubiquitous coverage, high performance and cost effectiveness. We map best-in-class technologies to business needs based on performance, security and cost.

With more than 200 million connected devices globally, including more than 50 million meters, streetlights, grid management and partner devices running on our platform, it is

the most proven, flexible and value-generating smart network technology on the market. Our open standards-based platform enables seamless interoperability across a diverse range of products including meters, leak/theft sensors and wastewater/flood sensors to provide you with the best-in-class solutions to help realize your business objectives.

Moving from AMR to AMI

Thinking about how you can turn your automated meter reading (AMR) to an AMI network? Now you can easily transform your water AMR to an AMI network by connecting to a neighboring Itron Smart Streetlight or electric AMI canopy through a shared network model.

Not ready to upgrade to an AMI network? Consider Temetra for cloud-based meter data collection or an Itron Mobile package as an incremental step toward AMI. These solutions enable walk-by and drive-by meter reading using the latest smartphone and tablet technology to streamline meter data collection. AMR is a very economical solution for reducing operational costs and increasing meter reading safety and accuracy.

60+ MILLION *Itron Managed Services is currently overseeing more than 60 million endpoints across 1,000 utilities*

Cloud-based Meter Data Collection and Management

Temetra is an innovative solution for cloud-based meter data collection and management. It allows you to efficiently manage data, secure your revenue stream and improve customer service with the simplicity and affordability of cloud-based services. Designed to help optimize your operations without having to maintain on-premise hardware and software, Temetra provides you with the latest software enhancements and security features to enable continuous, reliable operation.
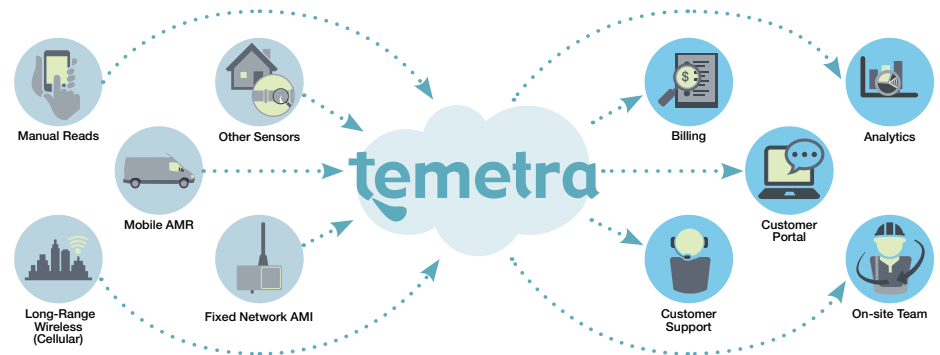
Temetra offers a seamless interface to existing customer information and billing systems using a powerful set of API interfaces—so you can utilize multiple applications from one cloud platform. With customer satisfaction in mind, you can improve consumption awareness with the optional Customer Web Portal, where you can proactively inform customers of abnormal usage to reduce billing complaints and provide them access to monitor their usage over time.

Key Benefits:

» Secure and convenient data storage and access on the cloud
» GIS-based route optimization for faster and more efficient meter reading
» Real-time remote data loading and unloading
» Interfaces seamlessly to billing systems and other third-party applications
» Device and communications agnostic for easy system integration

Establishing a cloud-based mobile data collection and management foundation enables you to gain value-based insights and results, through Temetra Analysis, that address the non-revenue water losses within your water distribution system.

Manual Reads · Other Sensors · Mobile AMR · Long-Range Wireless (Cellular) · Fixed Network AMI · temetra · Billing · Analytics · Customer Portal · Customer Support · On-site Team

Flexible and Cost-Effective Network Options

Foundational to smart water systems are smarter, data-driven services where connected devices provide real-time visibility to monitor usage, proactively identify leaks to reduce waste, engage consumers in conservation programs and accelerate progress toward sustainability goals. Connected communities realize the benefits and value of these programs. Being connected allows communities to leverage data collected from a broad range of devices and sensors to deliver actionable insights that enable you to achieve valuable business outcomes. To help you stay focused on your operations, we offer options for delivering your communication network beyond the traditional own and operate model. With Itron's Software as a Service (SaaS) and Network as a Service (NaaS), water utilities can realize all of the benefits of AMI, without the headache of owning and operating a network and systems that go with it.

A fully supported managed services model (NaaS, SaaS or cloud-based) allows your resources to focus on the critical issues that drive business while Itron manages the rest.

NORTH AMERICA

Migrating from AMR to AMI

Solution overview:

» AMI solution with leak detection
» Secure consumer portals
» Non-revenue water detection

System overview:

» 13,500 water taps serving 33,000 residents
» Upgraded Itron AMR system

Results:

» >99% read rate from AMI system
» Leaks resolved within 72 hours
» Increased consumer engagement through portals: "customer service has soared!"

ADVANCED DEVICES AND COMMUNICATIONS MODULES

Transform Meters into Communication-capable Devices

Designed to transform mechanical meters into data collection points, our communication modules and data loggers enable remote reading and monitoring of on-site activities. These communication modules are compatible with water meters from all major manufacturers and third-party meters, enabling water utilities to consolidate all water meters under a single communications platform. Powered by proven, advanced lithium battery technology, the module is designed for 20 years of battery life in both fixed network and mobile modes.

500W ERT Modules

Streamline operations and maximize resources while also connecting to the IoT with Itron's 500W ERT Modules. Featuring a compact design, industry-leading battery life, firmware download and technology designed to adapt and grow with your business, the 500W ERT Modules enable easy connection to existing or new network operations as your business needs evolve. 500W ERT Modules support both Encoded and Pulse output meters all in one module.

The module is also able to communicate meter alarms provided by third-party water meters.

These alarms include:

- » Empty Pipe
- » Temperature
- » High flow
- » Meter Low Battery
- » Meter Tampering

- » Reverse flow
- » Zero consumption

NOTE: This functionality is only available while the 500W is in Network Mode.

SUCCESS STORY

Delivering Results Around the World

NORTH AMERICA

Reducing non-revenue water with leak detection technology and analytics

Solution overview:

- » Implementation of city-wide AMI system
- » Cloud-based analytics for non-revenue water identification
- » Real-time data on usage and potential leaks

System overview:

- » 38,000 water endpoints
- » 11,000 acoustic leak sensors
- » 550 miles of pipeline

Results:

- » 38% reduction in non-revenue water loss
- » Significant reduction in operating and water production costs

NORTH AMERICA

Situational awareness driving intelligent actions and operational efficiencies

Solution overview:

» Multi-purpose AMI network that includes water, gas and electric meters and sensors

» Cloud-based analytics for non-revenue water identification

» Comprehensive analytics used across commodities

System overview:

» 205k water, gas and electric meters

» Meter temperature, backflow indication and leak sensing

Results:

» Significant realization in operational savings

» 90% reduction in the time to detect water leaks and theft

» Applying corrective actions where and when needed across the system

Leak Sensors

Itron Leak Sensors are acoustic sensors that listen for leaks in the distribution system of a water network. The leak detection software enables you to identify and repair leaks in the distribution system before they become catastrophic main breaks.

This solution reduces non-revenue water losses, associated costs and potential service disruptions caused by major leak events through examining the pipe network over the best period for detection of leaks. This results in providing a higher quality of data to mlogonline™, which in turn improves leak identification.
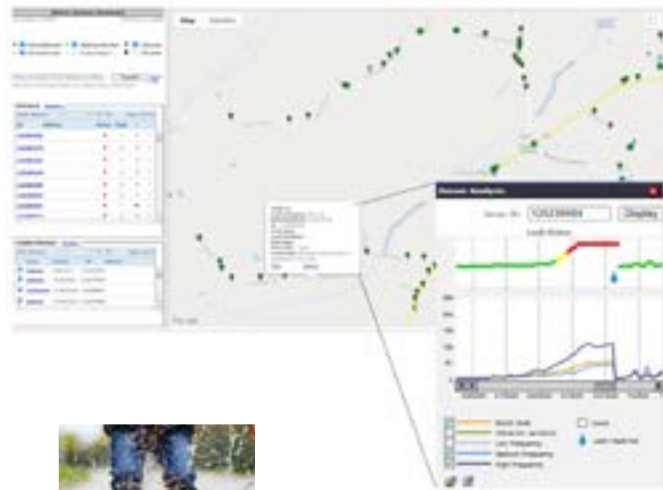
Delivering the Performance You Need

Solutions for today and tomorrow, we invest time and energy into ensuring quality, innovation, reliability and safety in all of our water devices.

The Right Meters: Measure Every Last Drop

Serving residential and C&I markets, through reliable third party meters, we utilize our deep expertise in the water industry to hand pick devices with high metrological performance and proven robustness and durability.

Leveraging various technologies from mechanical principles to solid state measurement, we provide a choice of flexible water solutions for utilities seeking endurance and reliability.

STREETLIGHT THE WAY TO SMARTER COMMUNITIES

A smart streetlight or electric AMI network canopy can do more than just collect consumption data. Network sharing options can provide utilities and cities under existing Itron IIoT network canopies the ability to move to a multi-application AMI solution. Quickly and cost-effectively unlock the benefits of advanced applications like leak detection, flood sensing, wastewater overflow sensing, environmental sensing and more.

Smart Communities Can Deliver 3-Dimensional ROI

Multi-purpose IoT platforms provide a foundation for cities to deploy a variety of smart solutions to modernize operations and become more efficient, sustainable and equitable, providing a three-dimensional return on investment (3D ROI).

1.) Deliver Economic Benefit

IoT-enabled solutions like smart streetlighting and AMI automate existing business processes and deliver remote services to eliminate truck rolls and reduce the cost of service for citizens.

2.) Improve Quality of Life

Smart solutions like smart parking and air quality management can create a better quality of life by improving public health, mobility and safety.

3.) Establish Environmental Stewardship

Conserving energy and water and eliminating pollution with solutions like leak detection and wastewater management is an essential pillar of any smart city strategy.
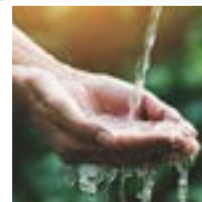
3 MILLION Smart streetlights deployed under Itron IIoT network canopies globally

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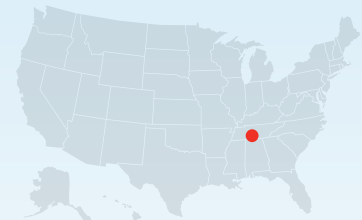
NORTH AMERICA

Sustainable water and electricity consumption

Solution overview:

» Fixed AMI network with hourly reads

» Analytics software

» Managed cloud-based hosted services

System overview:

» Reverse osmosis water system

» 130-140 DMAs across distribution system

Results:

» Up to 50% reduction in non-revenue water, goal of <5% NRW now attainable

» 95% decrease in the time to get NRW reports

» <4 days hurricane storm recovery using AMI data

The Itron Partner Ecosystem

Our technology is the foundation for your ability to solve key business challenges, drive revenue and deliver new services to your consumers. Our platform is standards-based at every level to ensure seamless interoperability with third-party devices and applications. The vast Itron Partner Ecosystem brings together a network of companies driven to solve problems and innovate rapidly. In collaboration with our partner ecosystem, you are able to catalyze innovation and accelerate your digital transformation.

CONCLUSION

Globally, over a third of water pumped from distribution plants is lost before it ever reaches a consumer. With scarcity and water loss issues, aging infrastructure and a shift toward digitalization, water utilities and municipalities are at a crossroads. Let us help you make the most of this precious resource—by minimizing or eliminating non-revenue water, engaging your consumers and providing actionable insights that improve your operations and allow you to continue to deliver clean, reliable and safe water service.

Itron delivers a comprehensive, outcomes-oriented approach to help you achieve your most pressing business goals. We pair the right metering and sensing technology with secure, reliable networks and software/analytics that drive efficiencies, predict and prevent problems, and alert you to leaks so you can proactively fix them. We deploy our solutions in a variety of ways to suit your needs—everything from utility-owned and operated infrastructure to our turnkey world-class managed services.

We have the deep industry expertise to help you solve your challenges today, and those in the future. From intelligent networks and smart devices to analytics and services, we'll help you manage and **connect every drop!**

ITRON SOLUTIONS FOR SMART WATER DISTRIBUTION
Making Every Drop Count
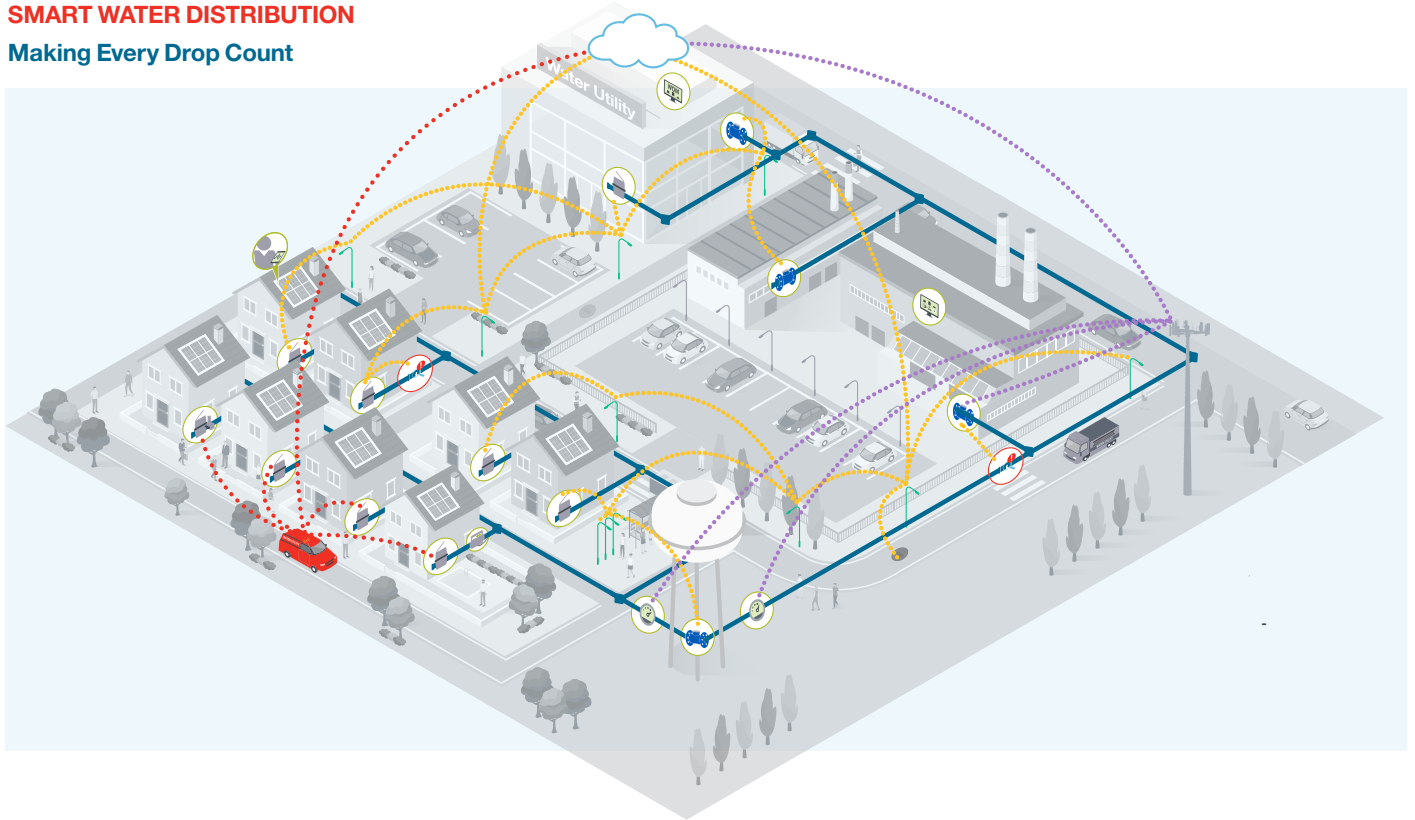
DEVICES AND CAPABILITIES

- Waste water sensors
- C&I meters
- Pressure sensors
- Residential water meters
- Communications modules for use with third-party meters
- Remote turn-off/on valves
- Leak sensors
- Software
- Mobile data collection and management
- District metering analysis
- Consumer engagement portal

INTELLIGENT NETWORK CONNECTIVITY

- RF
- Cellular
- Mobile

TEMETRA ANALYSIS APPLICATIONS

Operational Visibility
- Automated Water Balance
- Water Loss KPI Monitoring
- Hydraulic Simulation and Visualization
- Transmission Mains Monitoring
- Event Investigation
- DMA & Territory-Wide

Water Revenue Assurance
- Meter Analysis
- Meter Anomalies Detection
- Replacement Recommendation
- NPV ROI Analysis
- Meter Gain Assessment

Water Leak Management
- Leak Pre-localization
- Hydraulic Calibration
- Acoustic Leak Sensor (100W/500W required)

Join us in creating a more **resourceful world**.
To learn more visit **itron.com**

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