

**RESOURCE
WISE**



kamstrup

SMART SOLUTIONS
FOR NOW AND THE
FUTURE





Specializing in Water Systems Analysis and Turnkey Smart Meter Systems

We provide utilities in and around New Mexico with state-of-the-art ultrasonic water meters, high-performance remote reading solution, advanced monitoring of system leaks and intelligent data analysis.

For us, smart metering is an intelligent enabler for improving consumer relations and optimizing operations. It is about improving billing, capturing nonrevenue water loss, and better asset management. It's about being able to make the right choices and make the right investments.

We deliver solutions in all shapes and sizes, and while every project is unique, our starting point is always the same – you the customer.

OUR HISTORY

Resource Wise has been in business since 2002. We have been assisting communities throughout New Mexico in Water Conservation and Metering. Our primary purpose is to help municipalities: federal, state, and local governments to conserve water by using Best Management Water Conservation Practices. We have been the sole-source provider for the City of Rio Rancho's Water Conservation Program since 2003. We have trained employees in metering: repair, sizing, proper installation and testing, as well as water auditing and irrigation water efficiency.

In 2012 Resource Wise became the sole distributor of Kamstrup Water Meters in New Mexico. In 2025 Resource Wise expanded distribution to parts of Southern Colorado.

FIELDS OF EXPERTISE

- Journeyman Plumbing License, State of New Mexico
- Irrigation Association Certified Landscape Irrigation Auditor
- Qualified Water Efficient Landscaper (QWEL) instructor
- Backflow Assembly Tester/Repairman Certification, City of Albuquerque
- Water Conservation Consultant
- Meters
- Metering
- AMR/AMI Systems
- Water Conservation
- Irrigation Efficiency
- Backflow Cross Connection

Who is Kamstrup?

A world leading manufacturer of advanced solid-state, or “static,” metering solutions for smart energy and water utilities, Kamstrup is headquartered in Denmark with employees in more than 20 countries. For over 75 years, utilities around the world have trusted Kamstrup to deliver reliable metering solutions.

20+
Countries

75+
Years

Here in North America, Kamstrup is focused on empowering water utilities.

+ Ultrasonic metering solutions

+ Network communications

+ Software applications

IT'S TIME TO KNOW

A large teal graphic overlay is positioned on the left side of the slide. It has a wavy, organic shape that tapers towards the bottom. The background of the entire slide is a photograph of an industrial factory floor with robotic arms and machinery.

30+ years of ultrasonic meters
experience

World class automated
production facilities in the USA

A white, rounded rectangular callout box is located in the upper right quadrant of the slide. It contains text about global shipping statistics.

14M+ ultrasonic meters
shipped globally with 0.5%
return rate

A white, rounded rectangular callout box is located in the lower right quadrant of the slide. It contains text about North American shipping statistics.

2M+ ultrasonic meters
shipped in North America
with 0.25% return rate

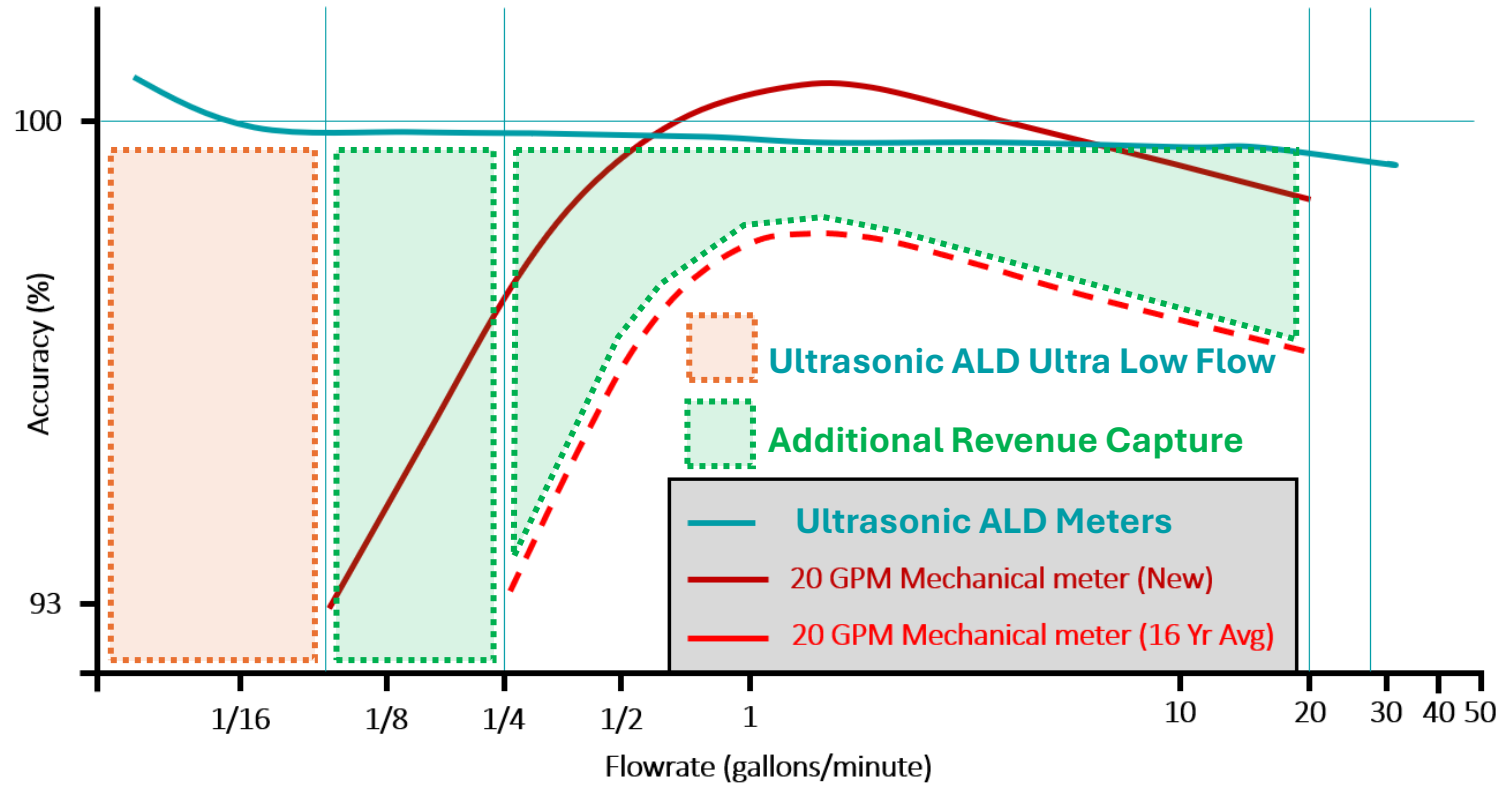
Ultrasonic Metering Principle



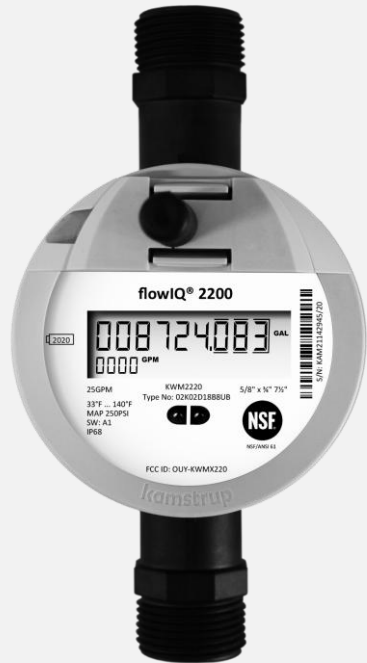
FlowIQ Meters Lead the industry in Low Flow Accuracy!

FlowIQ Meters Experience No Loss in Accuracy over the Lifetime of the Meter!

16 Year Accuracy Comparison



Why Low flow Matters



Year	Clayton County Annual Water & Wastewater Sales	Low Flow Recovery			Recovered Revenue 1%	Recovered Revenue 1.5%	Recovered Revenue 3%
1	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
2	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
3	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
4	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
5	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
6	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
7	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
8	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
9	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
10	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
11	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
12	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
13	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
14	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
15	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
16	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
17	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
18	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
19	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
20	\$99,660,426	1.0%	1.5%	3.0%	\$996,604.26	\$1,494,906.39	\$2,989,812.78
					\$19,932,085.20	\$29,898,127.80	\$59,796,255.60

Kamstrup flowIQ 2200

Integrated Acoustic
Leak Detection

Integrated AMR/AMI
(migratable)

Configurable LCD, Alarms,
and Data Logging

Slim profile for ease of
installation

Fiberglass reinforced PPS
or Stainless Steel



Industry leading start flow
0.008 GPM (5/8")

AWWA C715-18 and
NSF Compliant

IP68+ hermitically sealed

5/8" – 1"

Consumption profile/flow
rate histogram

20 year battery life
20 year accuracy warranty

The Three Pillars of Reliability

Materials

Design

Manufacturing

Is All Plastic the Same?

Kamstrup

- Polyphenylene Sulfide (PPS) with **40% fiberglass reinforcement**
 - Stronger under the stresses most meters experience with 92% tensile strength of brass.
- Independent lab tested to hold up against water and chlorine degradation

Others

- PPS with < 40% fiberglass reinforcement.
 - Weaker and more susceptible to breaking from stress and strain
 - Softer material means easier to cross thread
- Nylon
 - Susceptible to chlorine byproduct degradation in high concentration
 - Even softer than low fiberglass PPS

Bringing It All Together

Design

- Unibody flow tube and register cup maximize structural strength
- Larger gasket face minimizes gasket slippage

Manufacturing

- Automated production line
- Deep cut, tight tolerance threads
- Continuous, data-driven improvement
- Total meter testing including 30 minute flow test

Max Operating Pressure Comparison	
Meter	Max Pressure (PSI)
Kamstrup flowIQ Composite	250
Sensus iPERL	175
Badger E-Series	175
Sensus SR11	150

Kamstrup flowIQ 3200

1-5" – 4"

U0/D0 Requirements

Configurable LCD, Alarms,
and Data Logging

Consumption profile/flow
rate histogram



Slim profile for ease of
installation

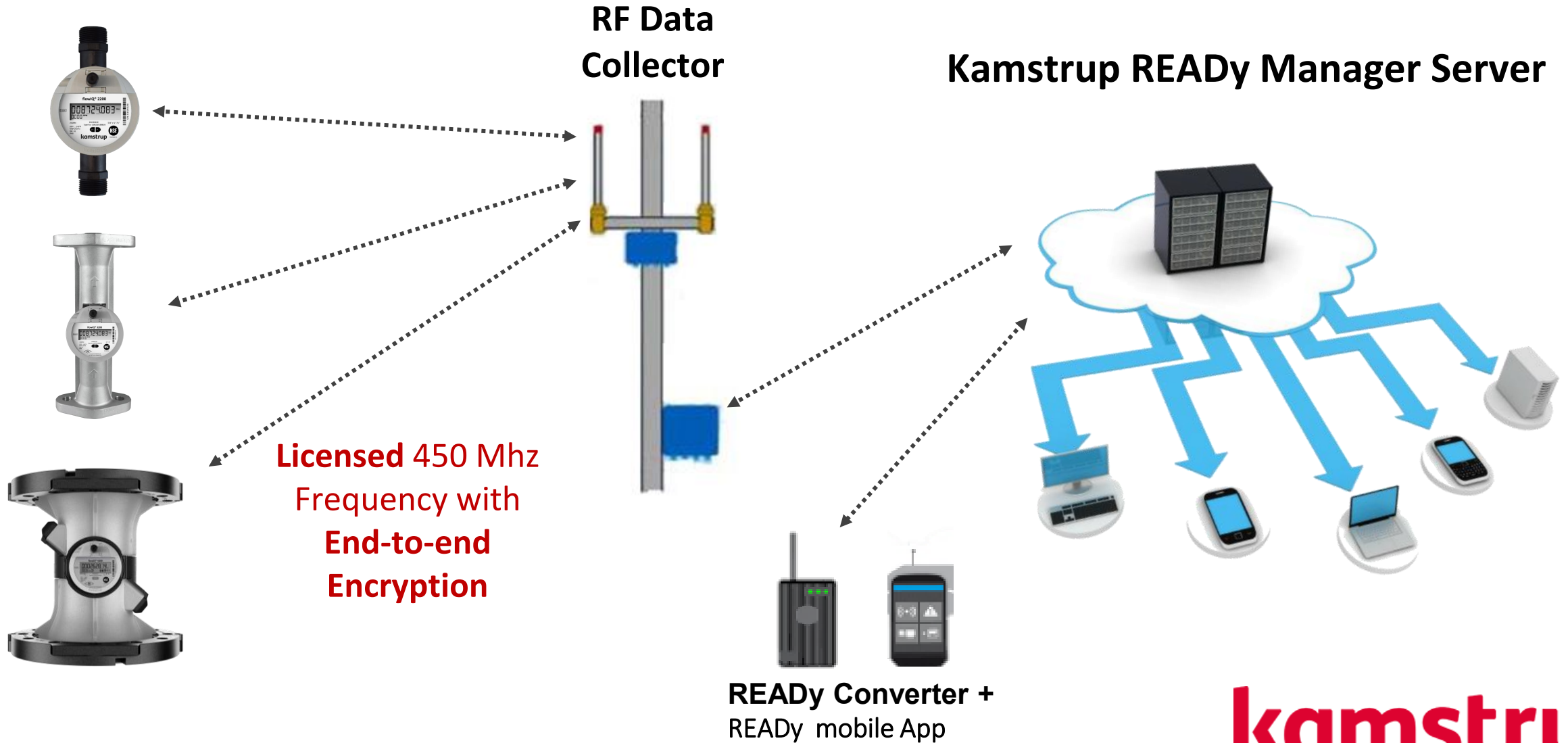
AWWA C715-18 and
NSF Compliant

Lightweight Stainless Steel
Easy and Flexible Installation

IP68+ hermitically sealed

Integrated AMR/AMI
(migratable)

AMI Solution



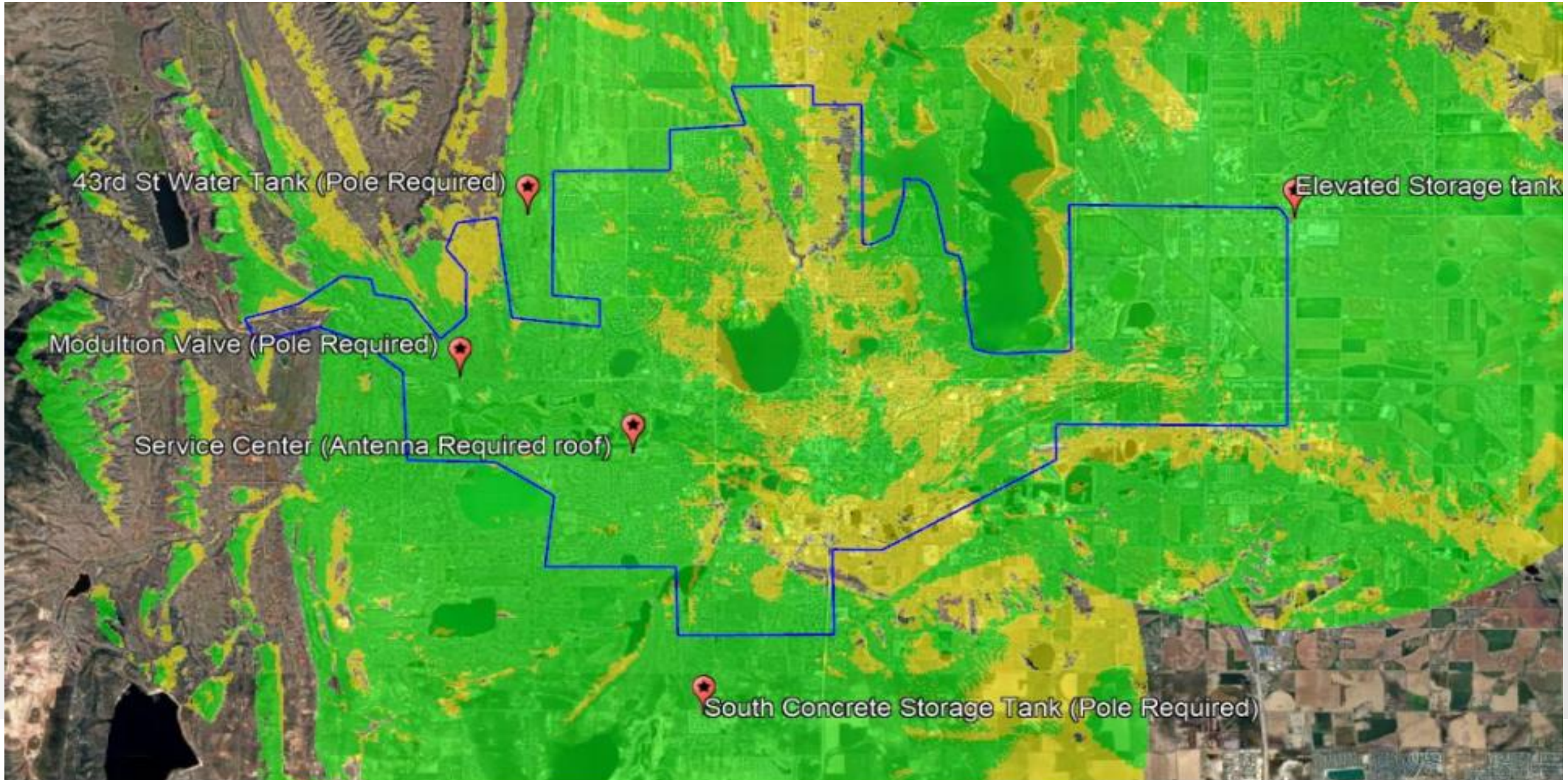
kamstrup

AMI Data Collector

- Optimized rugged design; NEMA 4x Boxes
- Automatic frequency programming & firmware updates
- Simple 2 wire installation from Bottom Box to Top Box
- Plug –and –Play
- 30 Day Backup for up to 25k meters
- Backhaul options
 - Cellular communication
 - Ethernet wired

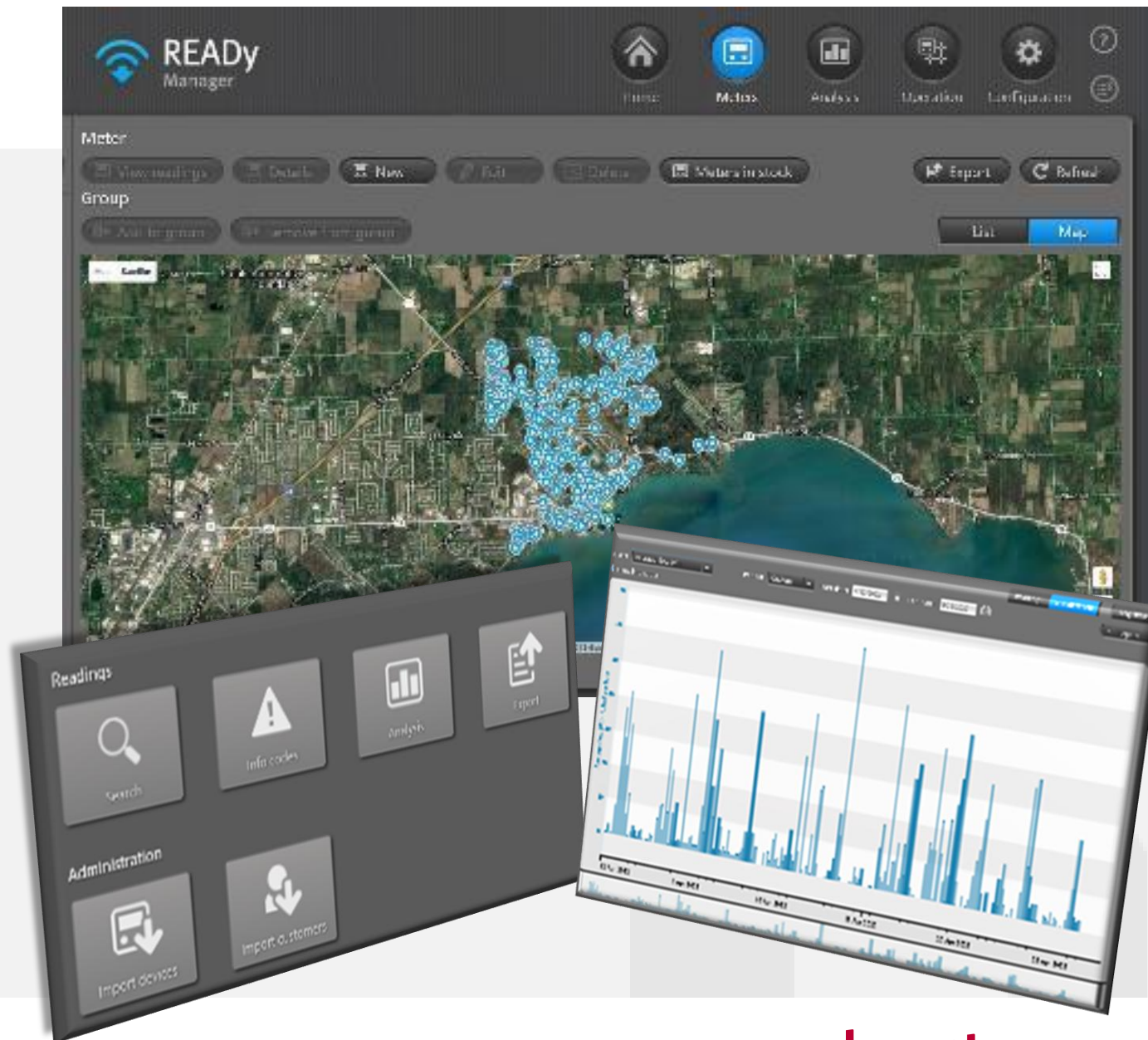


Propagation Study



READy Manager

- Fast and easy access to the Consumption Data, Info Codes, Customer Mapping, Non-Revenue Water Calculations, AMI Network Health, Customer Analytics, and Meter Reports
- Thin client – database hosted on Microsoft Azure platform
- Flexible import/export data structure will interface with any CIS vendor
- Automated flat file transfer or API Integration
- Meters can be read in either AMI (Fixed Network) or AMR (Drive By Fallback Read)



Water Loss: Why it matters

TOTAL Water Supplied	Authorized Consumption	Billed Authorized Consumption	Billed Metered Consumption	Non-Revenue Water
			Billed Unmetered Consumption	
		Unbilled Authorized Consumption	Unbilled Unmetered Consumption	
			Unbilled Metered Consumption	
	Water Loss	Apparent Losses	Inaccurate or Old Meters	
			Unauthorized Consumption (Theft)	
		Real Losses	Leaks on Distribution Water Mains	
			Leaks on Service Connections	

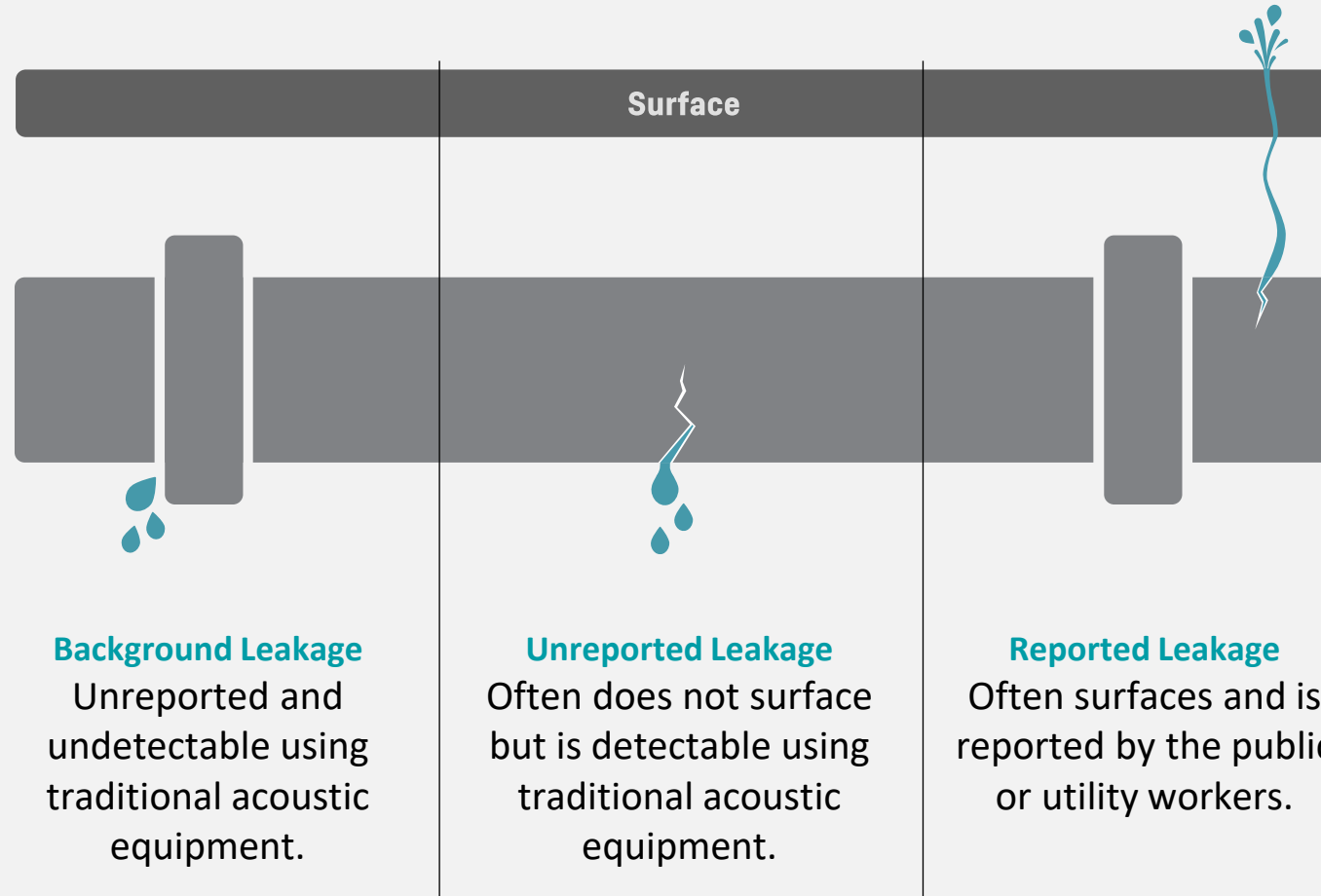
What Types Of Water Main Leaks Are We Trying To Identify?

(Hint: Not This One)

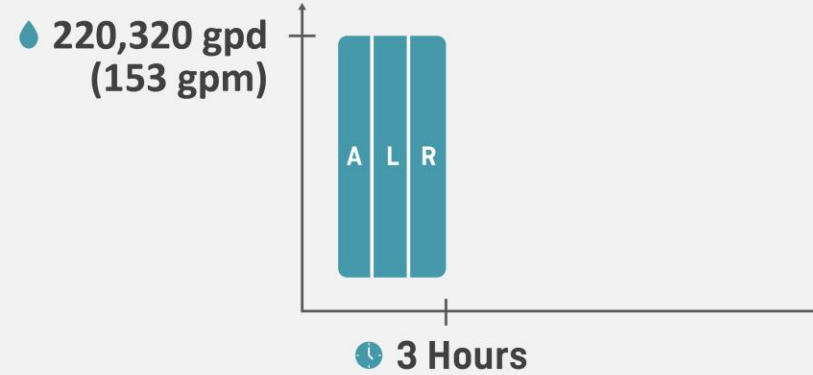


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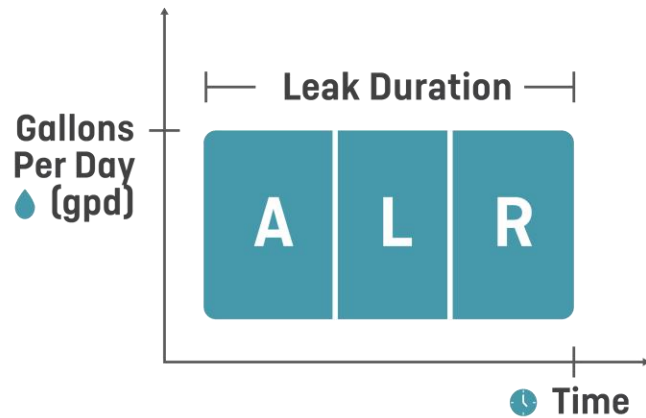
Types of Leaks



Run Time Matters



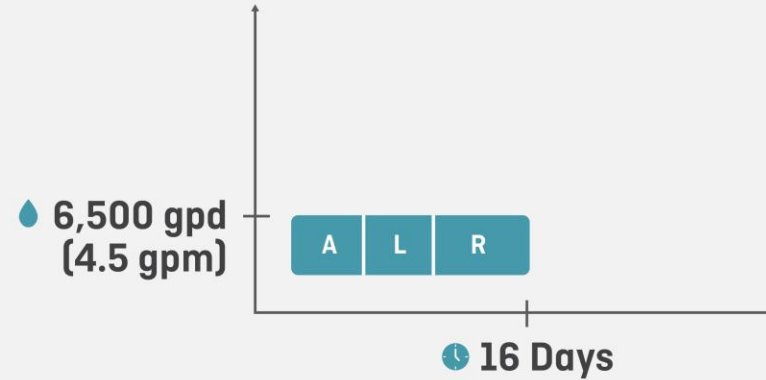
Reported Circumferential
Break on 8" Main
Total Loss = **27,540 gal**



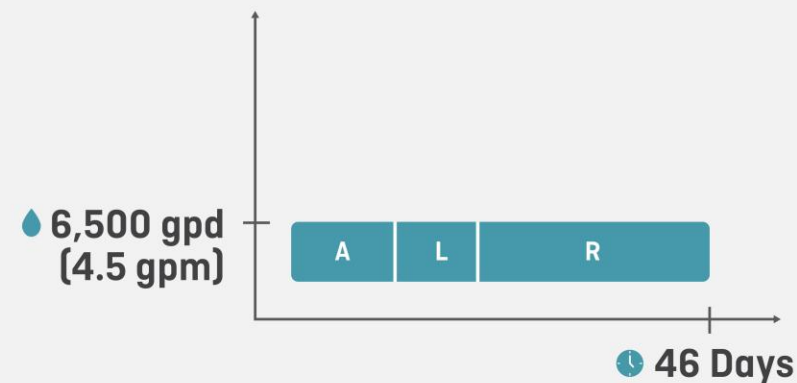
A = Awareness

L = Location

R = Repair

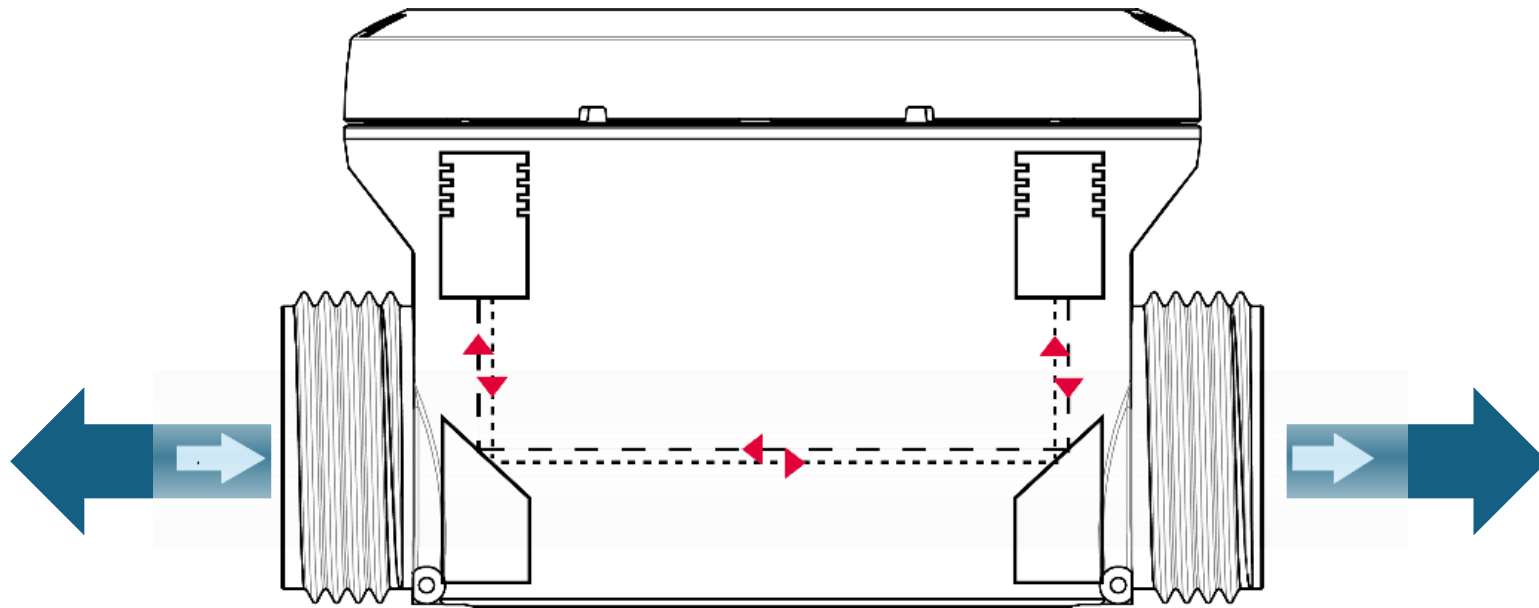


Reported Utility Side
Service Leak
Total Loss = **104,000 gal**



Reported Customer Side
Service Leak
Total Loss = **299,000 gal**

Acoustic Sensors With The Ultrasonic Measuring Principle



With the integral acoustic sensor, it is possible to measure noise in both directions of the pipe.

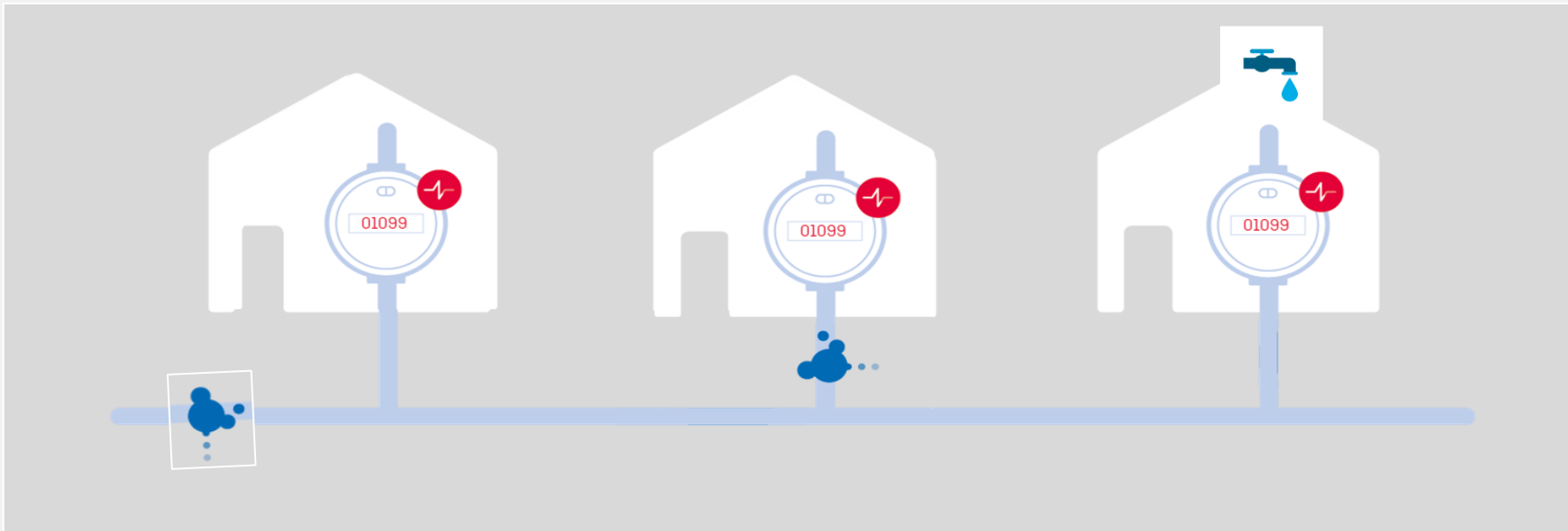
The acoustic sensor does not influence the flow measurements at any time.

What Types of Leaks Can Be Identified?

...With a Water Meter?

How does it work?

- It is well known that a leak will generate energy in the form of noise / sound.
- The built-in acoustic sensor allows the meters to measure acoustic noise within the distribution network upstream from the meter.
- Provide additional “info codes” (alarms) for any unusual customer side usage (continuous consumption/customer-side leaks).

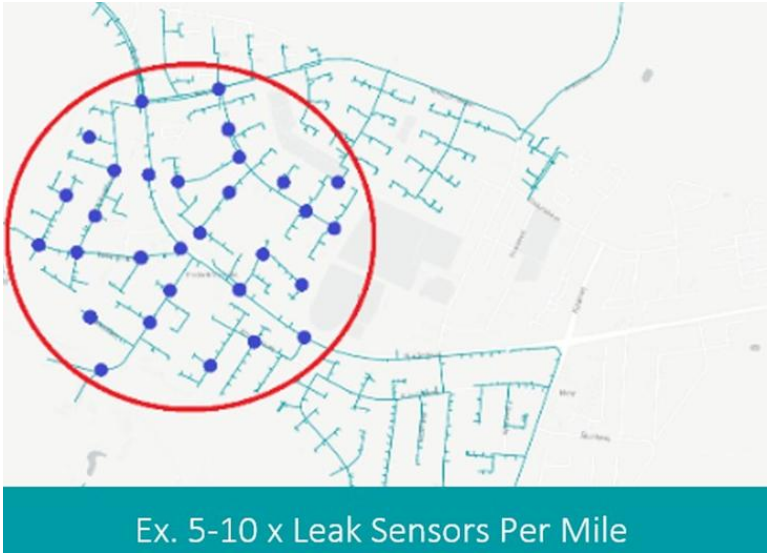


IT'S TIME TO KNOW

Why Use “Built-In” Acoustic Leak Detection?

Minimum Viable Survey Deployment vs Complete System Coverage

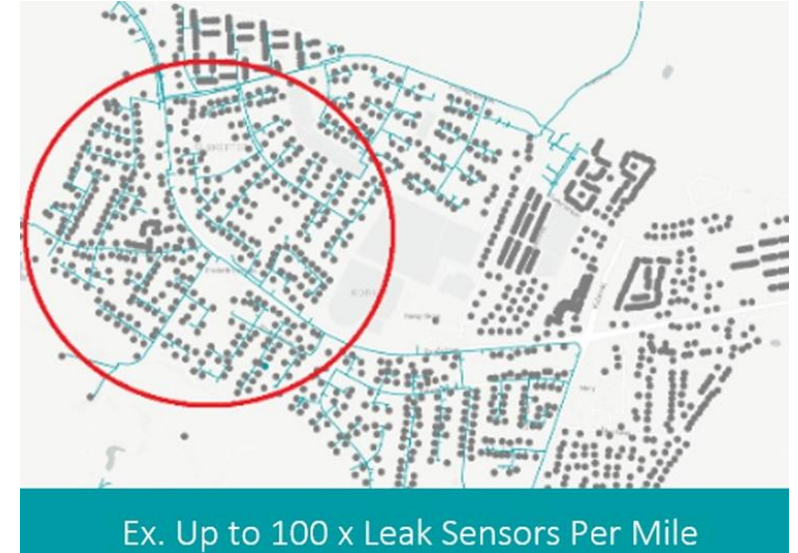
Main Line Coverage Only



Traditional Leak Loggers

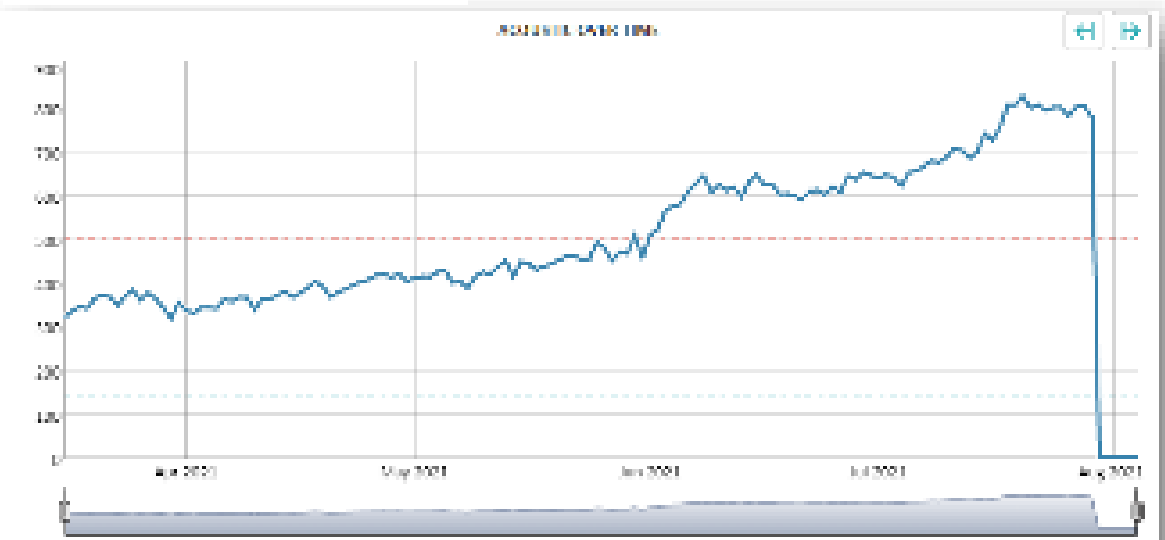
50%+ Of All
Distribution System
Leaks Occur At Or
Near Service
Connections.

Service & Main Line Coverage



ALD Meters

With 10x As Many Sensors Per Mile Compared To Acoustic Leak Monitoring Solutions Installed On Valves And Hydrants - **It's Almost Impossible For Leaks To Hide!**

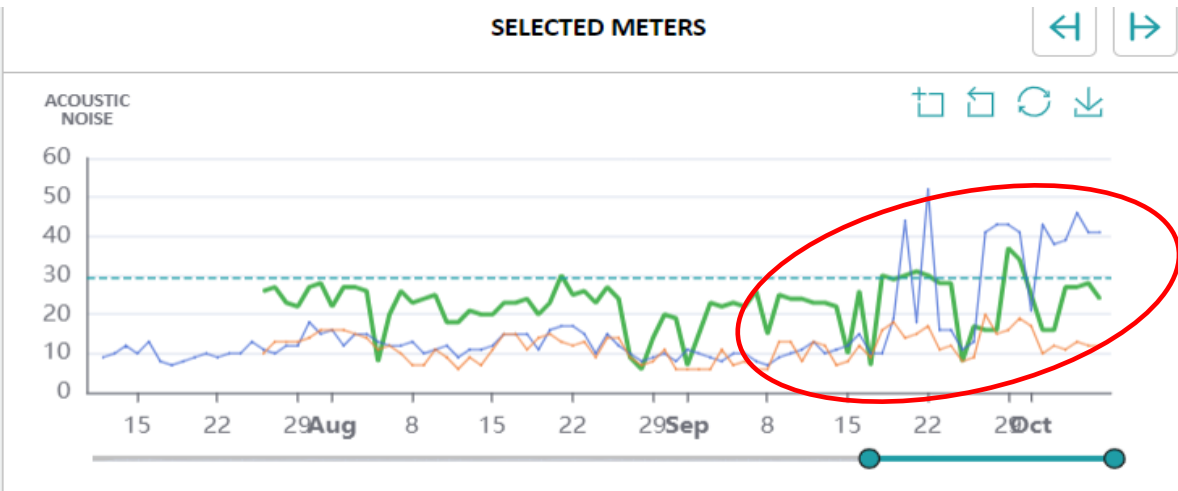
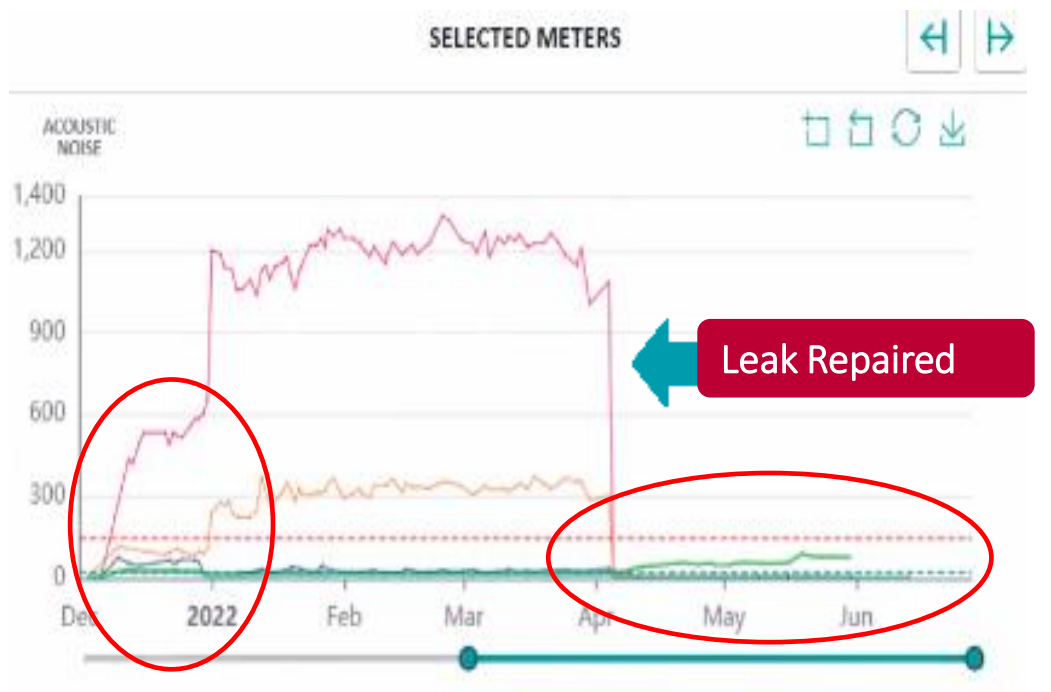


Address	Event date	Event type	Comment	Ignore	Track	Info code
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>






Address and serial no.	Event date	Event	Info code	Track	Ignore
301 S. Halladay Stre Good Thunder 560... 26357944	10/21/2024...	Leak		<input checked="" type="checkbox"/>	<input type="checkbox"/>
	12/10/2024...	Pinged at meter of interest, upon investi...		<input checked="" type="checkbox"/>	<input type="checkbox"/>

S Garfield Ave

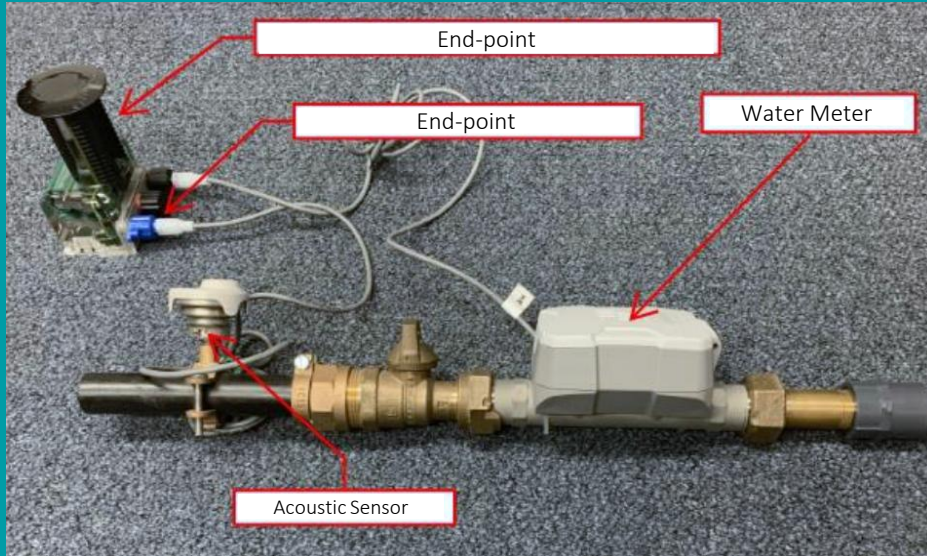


Address and serial no.	Event date	Ev...	Info code

A Built-In Acoustic Advantage

			
<p>Acoustic Leak Detection</p> <p>Across Your Entire Water Distribution Network.</p> <p>7,300 Distribution-Wide Acoustic Leak Surveys</p> <p>Over 20 Years</p>	<p><u>No Additional:</u></p> <p>Hardware, Infrastructure</p> <p>Or</p> <p>Manpower Required.</p>	<p>Focus & Prioritize Leak Investigations</p> <p>Get Closer.</p> <p>10x More Leak Monitoring Points Per Survey</p> <p><small>(Compared To Other Fixed-Base Leak Monitoring Technologies)</small></p> <p>More Actionable Data With Less Wasted Effort</p>	<p>Proactively Monitor For New Distribution Leaks</p> <p>Every <u>55</u> Minutes!</p> <p><u>26/7</u></p> <p>365 Days A Year For 20 Years!</p>

Reduced Complexity, Deliver the Future



Legacy Non-Revenue Water Solutions

Meter Cost + Radio Cost + Leak Sensor Cost

Meter installation + Radio installation + Leak Sensor installation

2 Wires

3 Hardware Components to Manage / Troubleshoot

3 Different Warranties

Unlikely 100% Distribution Coverage



flowIQ® 2200 with Embedded Acoustic Leak Detection Built-in

Just The Meter Cost

Just The Meter Installation

No Wires

1 Hardware Component to Manage / Troubleshoot

1 Warranty

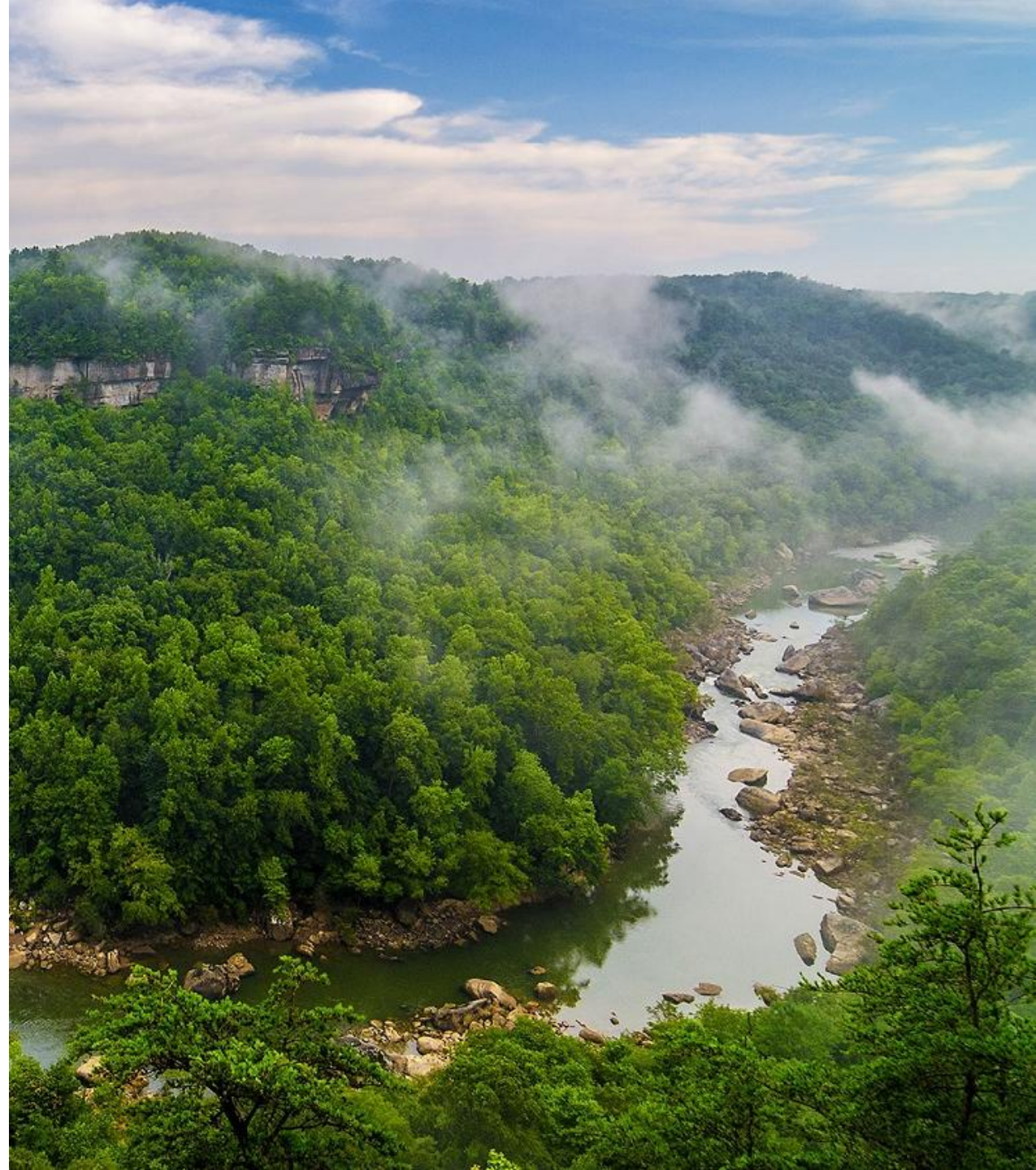
100% Distribution Coverage

IT'S TIME TO KNOW

Case Study & Testimonial

Town of Oneida, TN

- **4,620** AMI / ALD Meters
- **15** Data Collectors
- **118** Square Miles
- **322** Miles of Mainline Pipe
- 6 Month Deployment



Oneida Changed out 4,620 Mechanical AMR Meters in 6 months





Water Loss at 51%

Oneida Water Department under new management seeing the water **loss at 51%**, chose to go with the new AMI/ALD meter due to its overwhelming accuracy and reliability.

In the first 3 months, Oneida went **from 51% Non-Revenue water loss, down to 28%**.

- Of that, **10.7%** was after the initial total changeout. Which indicates the existing water meters were not registering accurately.
- At the initial Kamstrup meter startup Oneida had **77 meters** that had acoustic sound levels over **100 noise value** indicating possible leaks.



Water Loss Recovery

Initiated an aggressive water loss recovery program:

- Placing **2 full time employees** with leak detection equipment.
- Using ALD, **70+ leaks** were located and/or repaired by the Distribution repair crew. (2022)

Currently:

- **Expect to be at or below 15% water loss in 2025** which will save approximately **\$140,000** in lost revenue and **gained 36** working days not having to read meters to spend more time finding water leaks.

IT'S TIME TO KNOW



Cost Savings

During the initial changeout, Oneida's water treatment plant was operating on average around **14-15 hours** per day. 3 months later it was now down to **11-12 hours per day** resulting in even more dramatic **OPEX Savings** in Electricity, Treatment Chemicals, and Man Hours.

Fun Fact:

A 3 hour per day reduction in water treatment plant runtime equals 1.5 months less runtime (Over 45 WTP Operating Days Saved) in just year one!



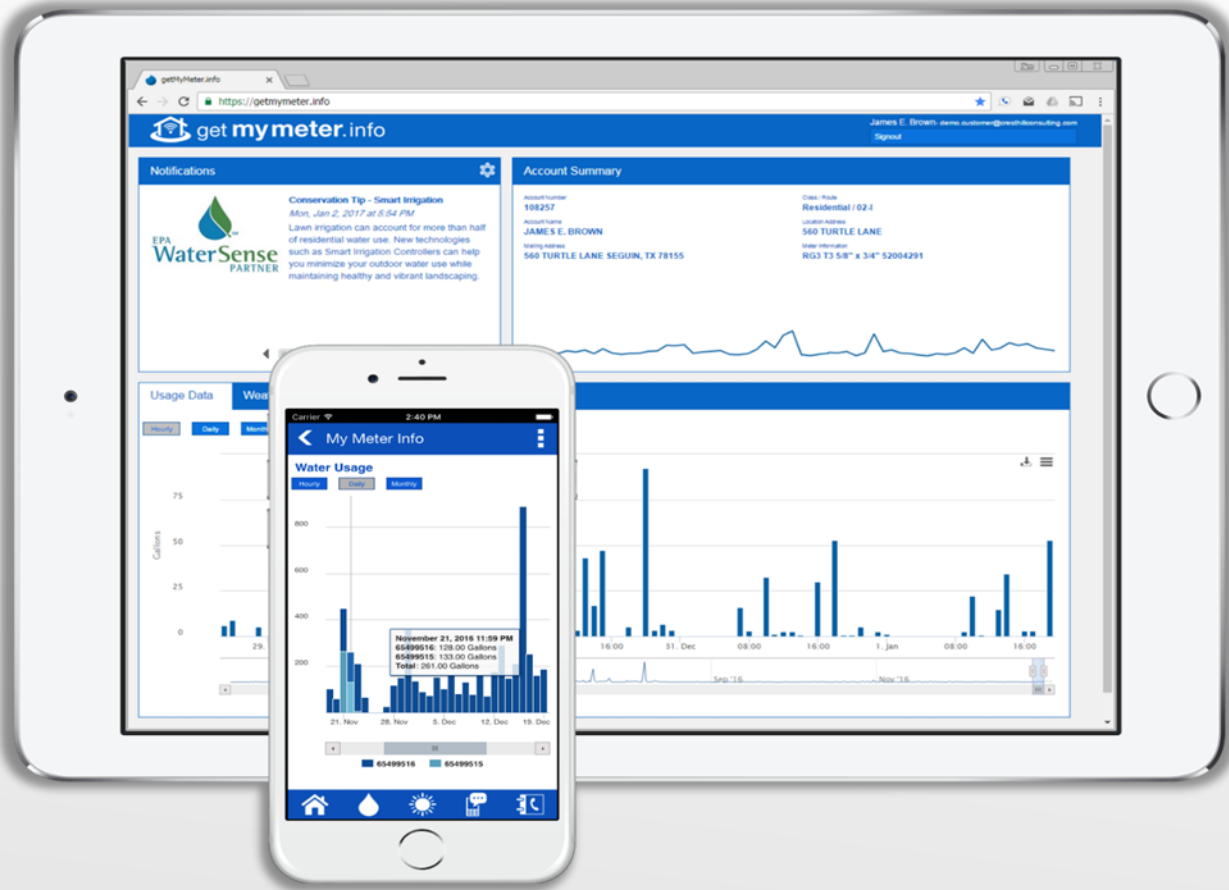
H₂O Analytics

ADVANCED WATER ANALYTICS,
CUSTOMER ENGAGEMENT AND
MOBILE APP SOLUTIONS

Customer Portal and Notifications

- **Integrated Solution**
Linked to your Billing and AMI systems
- **Utility Customers can “Pull” Information**
Meter data and notifications on demand via smartphone apps
- **Multiple Notification Types**
Event-driven and bulk
- **Tailored to your needs**
Can be Private-Labeled
Single Sign On Integration

Customer Portal Web and Mobile Apps



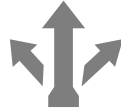
Customer Portal Benefits

Rapid Deployment



- **Cloud-based, Pre-built interfaces.** Deploy your portal solution with no on-site hardware and pre-built integrations.

Flexibility



- **Extensible and Customizable.** Enhance your solution with advanced analytics, custom dashboards and reports.

Driven by Analytics



- **Event-based communication.** Automatically notify your Customers when abnormal usage events occur.

Proactive Communication



- **Reach all your customers.** Communicate proactively, whether your customers install the portal app or not. Events, Bulk, Geo.

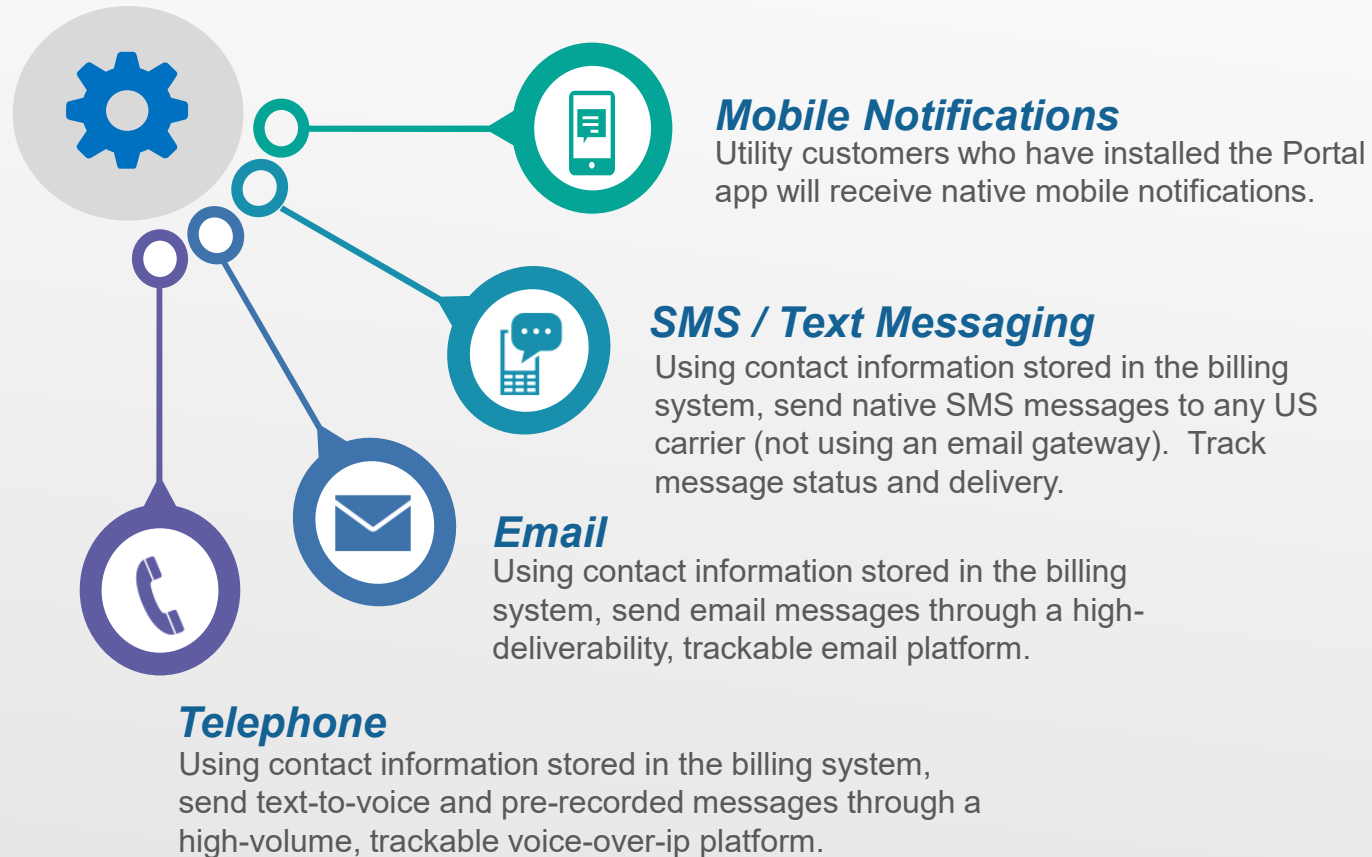
Anywhere Access



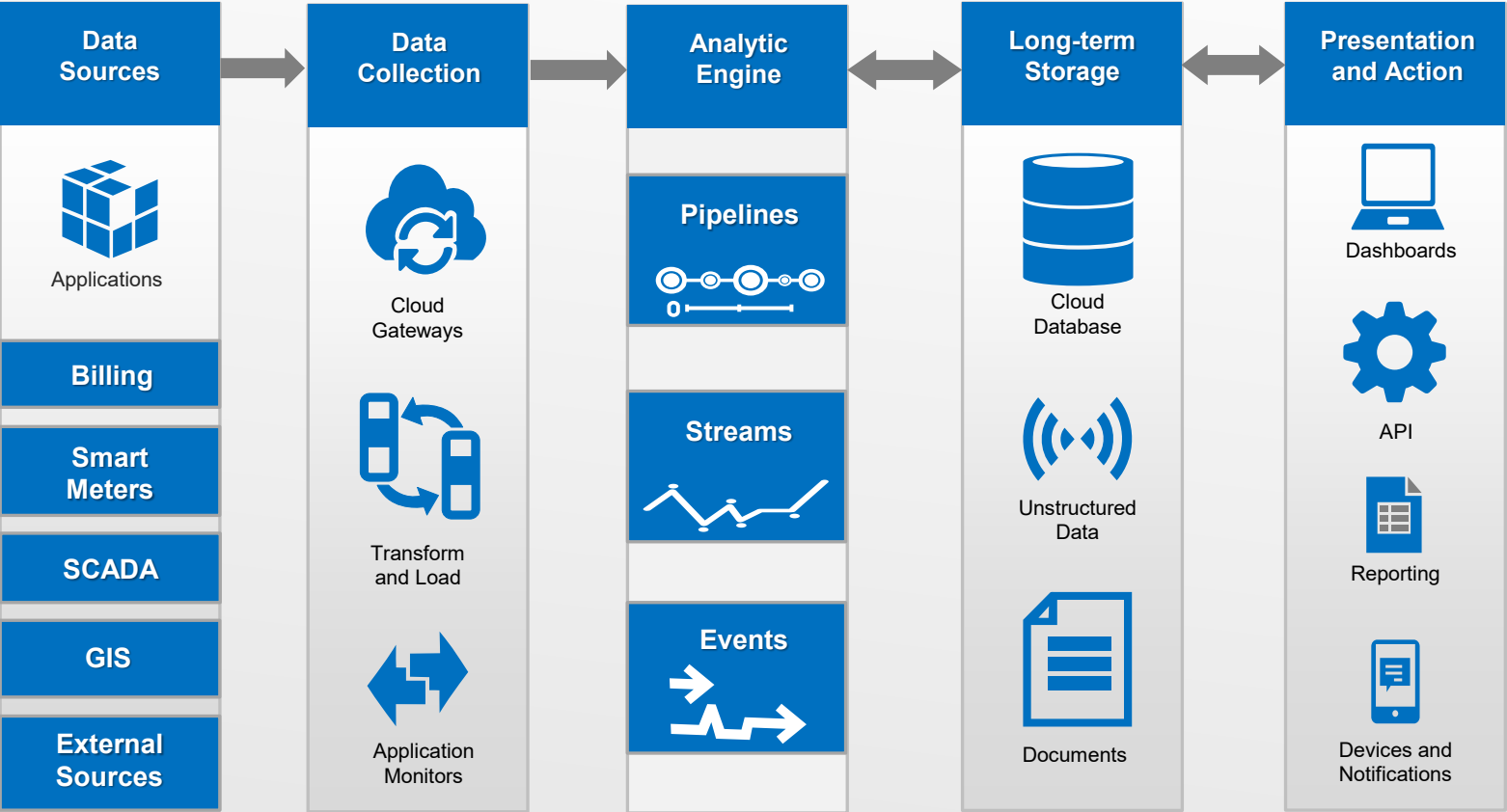
- **Cloud and Mobile.** True cloud architecture with 100% browser-based user interface. Android and iOS mobile apps.

Multi-Channel Customer Notifications

Driven by analytic events, geo-fencing and manual action

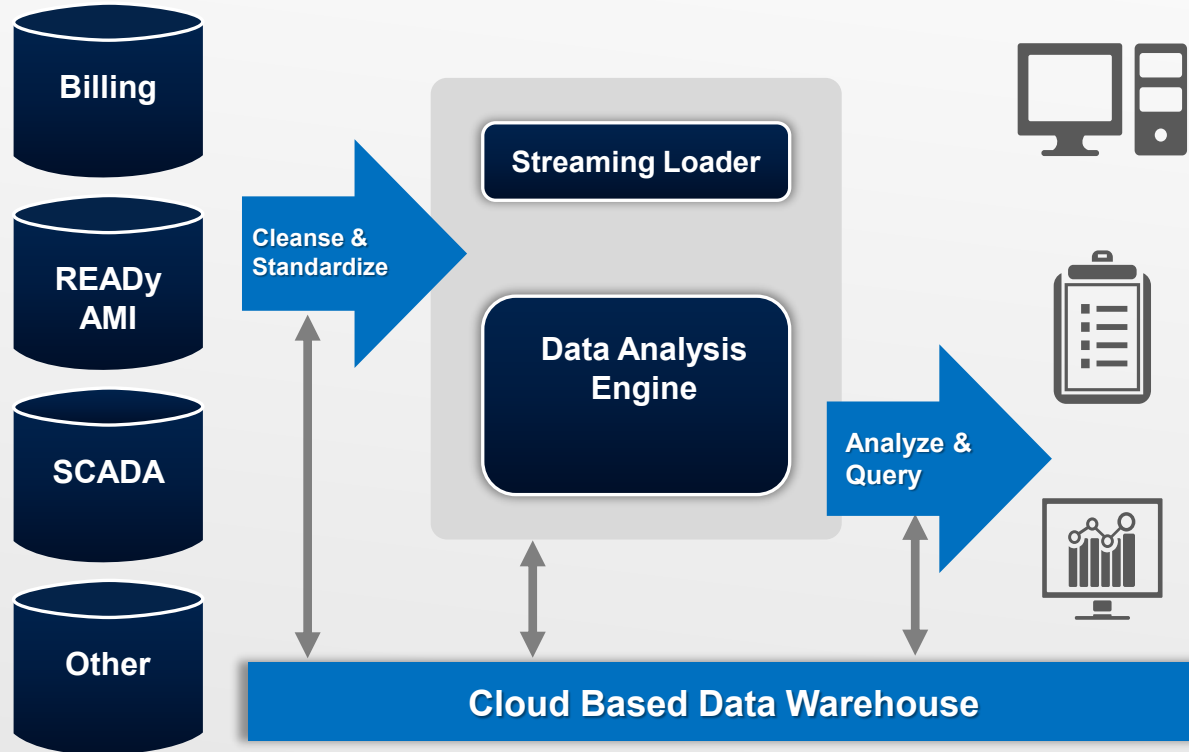


H2O Analytics Architecture



Customer Reporting / Data Warehouse

Real-time Analytics on Streaming Data



✓ **Cloud Based.** Fully managed and serverless.

✓ **Flexible.** Use with a wide range of industry standard report writing tools.

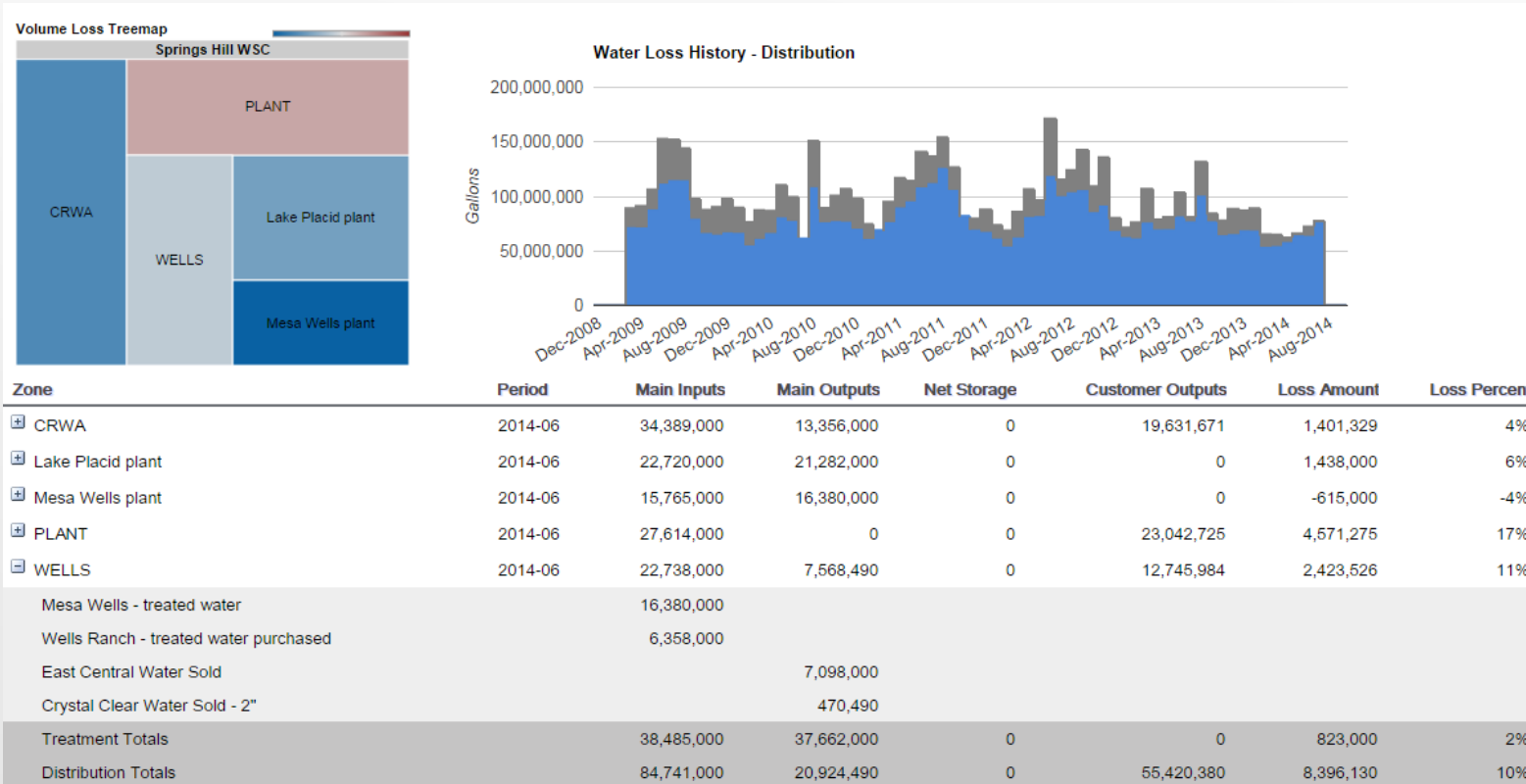
✓ **Performance.** Petabyte scale with high performance queries.

✓ **Secure and Reliable.** Encrypted, durable and highly reliable.

Water Loss Analysis Dashboard

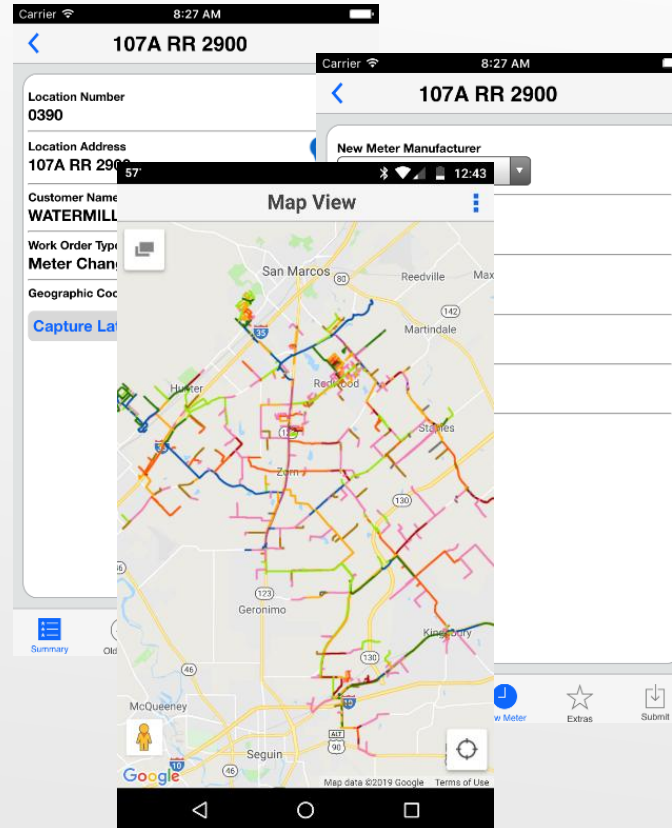
Roll-up of SCADA and Customer Meter Data

Visualize where your system is losing water and how much



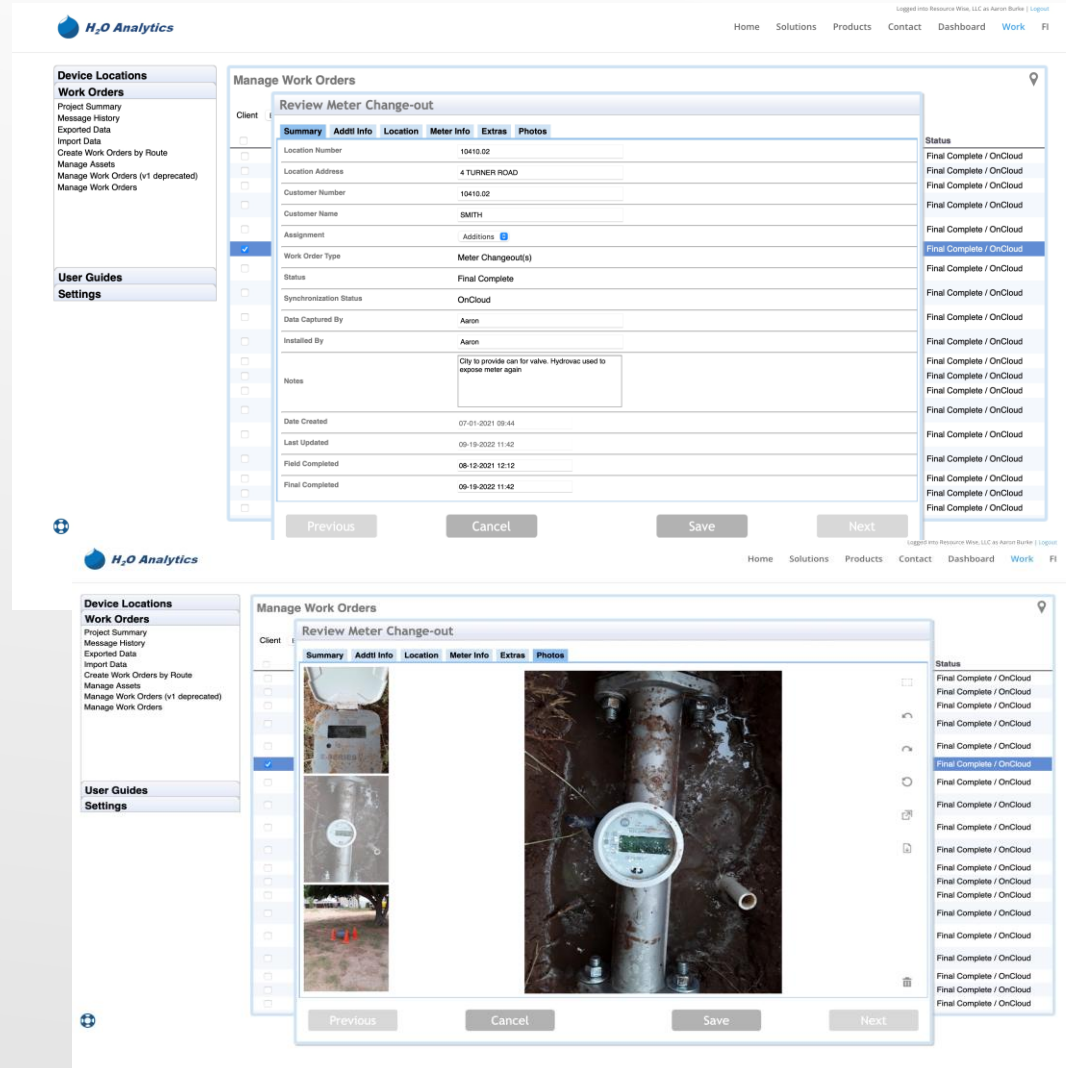
Mobile Work App

- **No cradles or docks required**
 - Over-the-air synchronization with the Management Console
 - Cellular communication
 - Wi-Fi
- **Quality Data Capture**
 - Configurable options
 - Job and Type specific rules and settings
 - Barcode Scanner
- **Meter and ERT Data**
- **Geo-Coordinates**
- **Digital Photos**



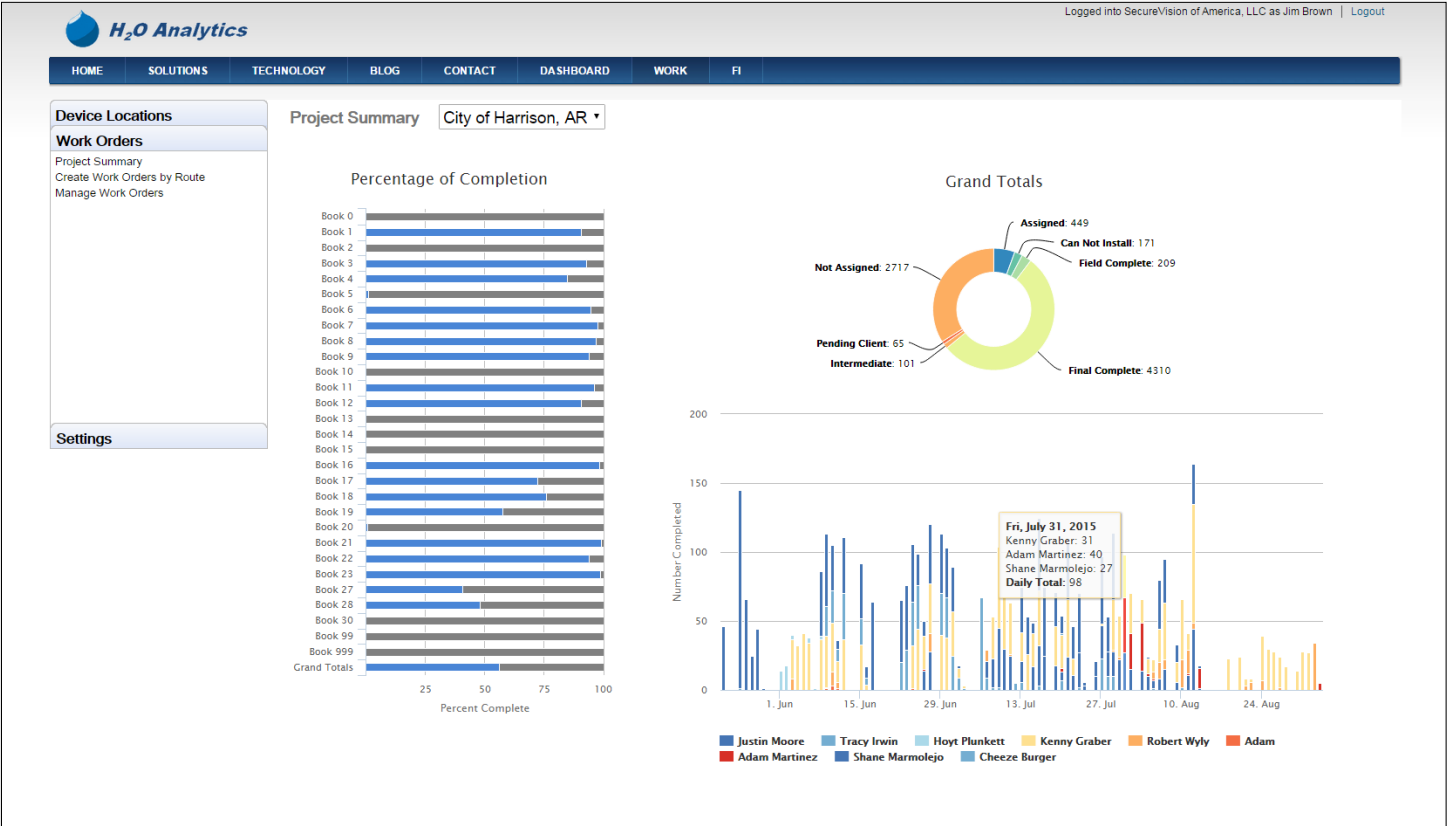
Application Flexibility

- **Database**
 - Location
 - Asset
 - Work
- **Screens**
 - Mobile
 - Management Console
- **Reports**
 - HTML, Excel, CSV
- **Documents**
 - Excel, Word, PDF



Cloud Management Console

Reads location, asset and existing meter data from Billing System
 Manages work-flow and project status





Thank you!

Questions?

