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# IoT helps Utilities Reduce Water Loss

## Leak Detection with IoT helps Utilities Reduce Water Loss

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## QUICKFACTS

### Customer Profile

Our customer is a pioneer in the development of advanced acoustic technologies, products and services that enable non-invasive diagnostics of water utility pipeline infrastructure, including leak detection, pipe condition assessment and water loss management.

### Objectives

The company wanted to develop a durable, secure, self-contained solution that could be quickly installed in the water distribution network to monitor for leaks. It would leverage existing fire hydrant infrastructure and would need to be compatible with multiple types and sizes of hydrants. The solution would include sensors, analysis software and power-efficient cellular connectivity for communications.

### Sierra Wireless Products and Services

- HL7800 module (Ready-to-Connect)
- Smart Connectivity



As water becomes more of a precious commodity, waste and loss in water networks takes a more prominent position. For utilities, water losses due to leaks, waste and theft is “non-revenue water”<sup>1</sup> and losses can range from 30-35%. The US EPA estimates that total losses are 1.7 trillion gallons per year at a cost of \$2.6B USD<sup>2</sup>. A major factor contributing to these losses is aging infrastructure. Each year, there are approximately 240,000 water main breaks, and break rates have seen an increase of 27 percent over the last six years. Equally concerning is that if water can escape the system, bacteria and other contagions can access the system.

## BACKGROUND

Our customer is a pioneer in the development of advanced acoustic technologies, products and services that enable non-invasive diagnostics of water utility pipeline infrastructure, including leak detection, pipe condition assessment and water loss management. The company enables municipalities, water utilities and industrial businesses around the world to boost water infrastructure efficiency, reduce costs and prioritize capital spending.

Most utilities have loss reduction targets. Failure of pipes and mains causes damage to existing infrastructure and impacts customer service. Being able to identify leaks and repair pipes is critically important.

## THE CHALLENGE

The company set out to take their expertise in acoustic sensor technology and develop a IoT solution for utilities. It wanted to develop a durable, secure, self-contained solution that could be quickly installed in the water distribution network to monitor for leaks. It would leverage existing fire hydrant infrastructure and would need to be compatible with multiple types and sizes of hydrants. The solution would include sensors, analysis software and power-efficient cellular connectivity for communications.



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– Company Executive

## SOLUTION

The company developed a leak detection platform containing acoustic sensors, networking hardware and analysis software, batteries and an antenna. The solution uses fire hydrants to create a reliable monitoring network.

The company selected the Sierra Wireless HL7800 module and Smart Connectivity services bundle to connect their sensors for three reasons – power efficiency, global coverage and built-in connectivity. The HL7800 module offers the lowest power consumption in its class, allowing batteries to last longer in the field. This reduces truck rolls for batter replacement and represents major cost savings.

“We selected Sierra Wireless because it offered a module that was supported globally and was bundled with connectivity services – eliminating the need for us or our customers to negotiate carrier contracts,” explained a company executive. “The embedded SIM with global connectivity in the HL7800 module eliminates the need for us to provision individual SIMs, which reduces component and sourcing costs.”

The company’s product installs on a standard fire hydrant and is capable of identifying extremely faint acoustical noises emitted by leaks before they can be detected by conventional methods. This early detection enables utilities to prioritize repair based on actual need and the most efficient allocation of repair crews. Data from each fire hydrant is sent to the company’s cloud service and securely presented to each utility customer. Acoustic profiles help guide utilities on the priority of repairs. Leaks are identified and can be monitored or repaired immediately.

“Our permanent monitoring systems allows utilities to identify leaks as they form. Leak identification at inception helps municipalities reduce water loss, allows them to plan and prioritize repairs and avoid costly, catastrophic water main breaks,” said the executive.

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## BENEFITS

The company has completed hundreds of detection and monitoring projects globally for industrial and municipal clients, and with this new product, it can provide high quality and actionable information to water utilities, enabling them to optimize capital investments, repair and rehabilitation programs. This water metering solution also allows utilities to safely extend the operating life of critical water main assets.

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1. <https://www.waterworld.com/home/article/14070706/successful-water-leak-detection-and-audit-methods>

2. <https://www.aquify.io/world-water-loss-day-by-the-numbers-blog/>

### About Sierra Wireless

Sierra Wireless (NASDAQ: SWIR) (TSX: SW) is the leading IoT solutions provider that combines devices, network and software to unlock value in the connected economy. Companies globally are adopting IoT to improve operational efficiency, create better customer experiences, improve their business models and create new revenue streams. Whether it's a solution to help a business securely connect edge devices to the cloud, or a software/API solution to help manage processes associated with billions of connected assets, or a platform to extract real-time data to make the best business decisions, Sierra Wireless will work with you to create the right industry-specific solution for your next IoT endeavor.

For more information, visit [www.sierrawireless.com](http://www.sierrawireless.com).

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