

USE YOUR EXISTING FIRE HYDRANTS FOR PERMANENT WATER MAIN MONITORING.

Trusted to
Fight Fires



Proven to Find Leaks

EchoShore 

DX

DISTRIBUTION MAIN MONITORING

WANT TO SIGNIFICANTLY REDUCE NON-REVENUE WATER LOSS? THEN IDENTIFY LEAKS SOONER.



THE *ECHOSHORE*®-DX PLATFORM IS PROVIDING UTILITIES WITH A NEW GENERATION OF LEAK MONITORING SOLUTIONS.

The *EchoShore-DX* platform incorporates the latest generation of acoustic sensors to transform your aging underground assets into a smart water network. This innovative thinking is the result of Echologics pioneering success with correlating leaks on a variety of pipe materials and large diameter mains. The sensors are capable of identifying even the faintest of acoustical noises emitted by leaks that conventional methods can miss. This early detection capability enables utilities to identify leaks sooner and better prioritize repair based on actual need.

The *EchoShore-DX* platform is designed to provide more accurate information on the location of a leak. A key advantage of the *EchoShore-DX* solution is that it performs a system-wide leak correlation when first activated. This enables an accurate and known acoustical baseline for the monitoring zone and produces an exceptionally high detection accuracy of any leaks that may develop in the future, while greatly minimizing run time.

For a high level of flexibility, look no further than the *EchoShore-DX* platform. It's a system that can be expanded in phases. Once a desired monitoring zone is identified, fire hydrants are fitted with intelligent nodes. For larger monitoring zones, these nodes can be added as the need arises. And flexible information backhaul options enable the use of the platform for utilities of all sizes.

Converting existing fire hydrants into intelligent assets enables utilities to:

1. **Identify leaks early**
2. **Monitor leak progression**
3. **Prioritize field crew schedules**
4. **Significantly reduce pipe repair costs**
5. **Achieve non-revenue water loss targets**

HOW THE *ECHOSHORE*®-DX PLATFORM WORKS

At the heart of the platform is an intelligent node which is embedded into a standard fire hydrant cap. The remarkably designed node is pre-assembled and consists of an acoustic sensor, analysis software, network hardware, batteries and an antenna.

Installation of nodes into a fire hydrant offers several benefits that improve system performance and extends equipment life.

- **The node in a hydrant cap offers a better protected installation environment compared to valve box installations that can suffer from salt, silt and dirt accumulation.**
- **The above-ground location of the node antenna enables a stronger and more stable radio signal.**

INTELLIGENT LEAK DETECTION

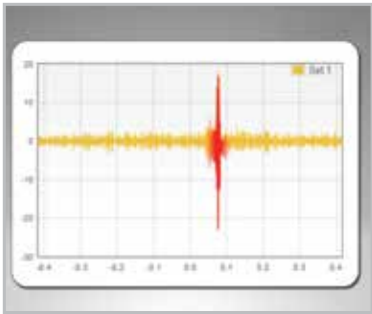
How *EchoShore-DX* works is nothing short of intelligent. Once a desired monitoring zone is identified, fire hydrants are fitted with nodes which communicate with a central data collection hub. As nodes collect data at predetermined times, proprietary filters are applied and the data is compared to baseline acoustical signatures at each hydrant location. When an acoustical anomaly is identified, the node sends a data file to the multi-channel Echologics Analysis Module (EAM). The EAM automatically requests additional correlation data from surrounding nodes, and automatically performs multiple correlation combinations to accurately target the location of the leak or acoustic anomaly. When a leak is confirmed, a notification is then sent to the utility.



Data collected by the nodes is compared to baseline acoustical signatures at each hydrant location.



Fire hydrant fitted with *EchoShore-DX* smart nodes.



The smart node detects an acoustic anomaly and the presence of a leak is confirmed.



Once identified, excavation of the location begins.



Operators can visually confirm leak.

REAL WORLD APPLICATION

IDENTIFYING A LEAK AT ITS INCEPTION CAN AVOID COSTLY AND CATASTROPHIC PIPE FAILURE

An installation of the *EchoShore®-DX* leak detection platform finds and monitors a growing leak that conventional technologies can not.

Working with a large private water operator, Echologics installed *EchoShore-DX* nodes in a community with aging pipeline infrastructure challenges.

Identifying and locating a leak in the earliest stages of its formation quickly proved the value proposition of the *EchoShore-DX* platform. The initial leak was so small that it could not be located from above ground by field crews. The leak was closely monitored and observed over a four-week period as it grew in size.

Conventional leak detection technologies made finding this extraordinarily difficult. A water pocket that formed underneath the pipe effectively

masked the sound of the leak. As well, the water was steadily draining to a river about a quarter mile away, eliminating visible surface clues of the leak. Slag residue from earlier iron ore smelting operations created a dense insulating layer around the pipe. This likely prevented ground-sounding microphones and conventional correlator leak detectors to hear the ultra-faint leak noises. That is until now.



EchoShore-DX platform detected this leak several weeks earlier than by using conventional equipment.

As the identified leak location was excavated, it revealed that the aged cast iron pipe had a crack on the bottom of its bell joint. Remedial action was then taken.

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