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Let's Solve Water

Case study
Sensus Analytics Acoustic Monitoring
Permalog®+
FlexNet® communication network

Findlay Township Utility Saves Money and Manpower with Proactive Xylem Technology

ACOUSTIC MONITORING APPLICATION IDENTIFIES WATER LEAKS EFFICIENTLY

Every drop of water counts especially when you purchase your water from an independent source. Findlay Township Municipal Authority (FTMA) obtains their water from the Ohio River through paid interconnects with two neighboring authorities in Western Pennsylvania.

Nestled among Findlay Township's rolling hills and wooded service territory are 75 miles of waterline. Remote leak detection became a priority for FTMA and they chose smart water technology from Sensus, a Xylem brand to help tackle unaccounted water loss.

"We need to know of any abnormalities in our water system every day," said Jason Orsini, Findlay Township Municipal Authority's General Manager. "Sensus has a user-friendly system that allows us to train staff to know exactly where to go to make the fix."

New digital solution

In 2019, the authority added remotely-managed acoustic monitoring to their smart water network. The Sensus Analytics Acoustic Monitoring application combines Permalog®+ technology with the FlexNet® communication network and SmartPoints® to monitor distribution lines and localize leaks. Gone were the time-intensive days of lifting and shifting loggers from site to site, then returning to the office for readings and back to the field for redeployment on a daily basis. Now the magnetically attached loggers remain in a permanent spot and technicians check on the entire distribution system from their work laptops each morning.

"We needed acoustic monitoring across our entire system, not only problem areas." said Orsini. "This technology allows us to know of any abnormalities within our 75 miles of waterline every day, whereas before with a lift and shift system we may not know of a leak for anywhere up to 35 days."

CHALLENGE

Find the source of leaks and reduce water loss across hilly terrain of Allegheny County, Pennsylvania

SOLUTION

Add acoustic monitoring solution to FlexNet communication network for remote leak detection and timely monitoring

MOVING FORWARD

Look at pressure zones and deploy ally residential meters for enhanced pressure and temperature sensing

SENSUS
a xylem brand

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> Jason Orsini, General Manager
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The acoustic sensors use soundwaves to listen to the distribution system overnight when ambient, background noise is at its lowest. Pipeline flow conditions are reported to the utility via Flexnet. The application automatically aggregates and analyzes data and alerts the authority when leaks occur. Moving to acoustic monitoring allows technicians to remotely identify and find leaks before they become major breaks.

"The system gives us a real quick snapshot of any issues within the system, we'll know right away if there's a leak," said Orsini. "This platform is user-friendly and then our technicians must go out and investigate."

Increase efficiency and reduce costs

It takes people to interpret the data. Orsini praises his team for learning the technology and proactively finding leaks. Most repairs can now be done during standard business hours. Employee overtime has significantly decreased from 200 monthly hours to less than 70 hours.

Findlay Township's smart system also helps with unaccounted water loss which has decreased from approximately 40 percent to five percent since the implementation of smart meters along with acoustic monitoring in the past decade. That's a realized cost savings of $100,000 per year - crucial for a water provider that relies on outside sources for its water.

Cost reductions are not the only benefit that the authority has experienced since adding the Acoustic Monitoring application. The municipality's customers are both surprised and delighted at the quick response from the utility when issues arise, especially when leaks are addressed on the same day they are detected.

"One of our technicians pinpointed a leak to a private home," said Orsini. "He knocked on the door and told the homeowner about the leak. The homeowner was shocked and asked, 'how do you know that?' Our technicians are using all available tools to provide our customers with improved service. The system works!"

Orsini adds the system has paid off in finding the leaks that never surface like in mine shafts or storm drains. He credits the digital solution for alerting the authority to their biggest underground leaks that are difficult to locate.

Beyond proactive leak detection

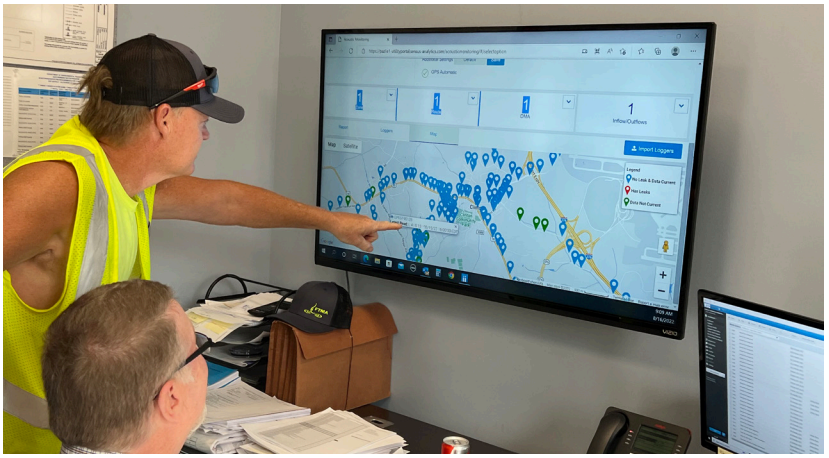
The Acoustic Monitoring application's capabilities have proven effective in FTMA's mission to master proactive leak detection, reduce costs and improve customer service.

Leaving the lift and shift methods behind, the utility has created an efficient operation that puts customer service at the forefront of what they do.

"I would very much recommend the acoustic monitoring system to other townships," said Orsini. "I would swear by it as we know the results are real. With the right people in place to interpret the data and track the leaks, we better serve our customers."

FTMA's continuous improvement doesn't stop with acoustic monitoring. Next, they're considering advanced applications with pressure management that include the Sensus ally® meter for enhanced pressure and temperature sensing.

The Findlay Township Municipal Authority team serves nearly 2,700 customers and the average daily water consumption for all customers is approximately 1.5 million gallons per day.



Every morning FTMA employees review a clear data visualization of the Sensus Analytics application to precisely locate potential leaks. Pictured standing is Jim Ervin, Foreman and Kyle Schumacher, Water Operations Manager reviewing Permalog+ data.

Employees Brandon Carter, Lead Utility Technician (pictured, foreground) and Jim Ervin, Foreman, perform a correlation for a leak based on data provided by Sensus, a Xylem brand's acoustic monitoring solution.

Sensus, a Xylem brand

637 Davis Drive

Morrisville, NC 27560

Tel +1-919-845-4000

www.sensus.com

xylem.com