

Dallas Water Utilities, Texas

UTILITY SAVES 54 MILLION GALLONS OF WATER PER DAY BY IMPLEMENTING A LEAK DETECTION PROGRAM USING HIGH PRECISION INSPECTION TOOLS

The Dallas water distribution system is one of the largest in the United States, with Dallas Water Utilities (DWU) providing water service to approximately 2.4 million customers within Dallas and the surrounding city limits. The system includes over 4,900 miles of water mains. Eleven years ago, the City brought in Xylem as part of their water management program, which started in the late 1990s in an effort to reduce non-revenue water loss and minimize the potential for leaks throughout its transmission infrastructure.

Challenge

Water transmission mains in Dallas have a higher potential of developing leaks in the summer because of extreme heat and dryness. With expansive clay soils, buried pipes are subject to shifting, causing leaks and water loss. To compound matters, over the past few years, the City has also been hit with excessive rain and flooding, which can lead to washouts, loss of soil bedding, and risk for accelerated pipe failures. Additionally, the Texas Water Development Board has issued a state decree to the City (and 15 other Texas regions) to update a water plan every five years, with the goal to improve conservation efforts and the responsible delivery of affordable water resources. Compliance allows the regions to receive low interest loans for capital work projects.

“With our aging infrastructure and recent drought conditions, leak detection is one of the most cost-effective ways to improve operational efficiencies, lower water system costs, and reduce unplanned water outage events, and Xylem’s solutions are helping us do this...”

Randy Payton, Assistant Director for Water Delivery, Dallas Water Utilities

Dallas is at the forefront of municipalities that are embracing innovative technologies to reduce the costly social, health and economic impact of leaks, and to address the physical integrity and hydraulic integrity of their water delivery system.

Solution

Since 2008 DWU has partnered with Xylem to utilize inline acoustic technologies to identify leaks and air pockets in large-diameter water



PROGRAM HIGHLIGHTS

- From 2008 to 2019 Dallas Water Utilities (DWU) cut water main leaks from 40 leaks to less than 21 leaks per 100 miles of pipeline
- Located and repaired over 285 leaks on large-diameter water mains, leading to a substantial decrease in main breaks and improving the community’s resilience to water-related disasters
- Reduced water losses on transmission pipelines by an estimated 54 million gallons per day, which could provide water to an additional 200,000+ new residences

SERVICES PROVIDED

- SmartBall® leak and gas pocket detection
- Sahara® leak and gas pocket detection with live CCTV video inspection

mains using the tethered Sahara® and the free-swimming SmartBall® devices. **Sahara™** is also equipped with a high-resolution CCTV camera that allows for viewing of the pipe interior during the inspection and is tracked in real time, allowing for all leaks and air pockets to be located and marked during inspection.

For longer runs, DWU frequently deploys **SmartBall™** for leak and gas pocket detection. The device rolls along with the flow of the pipeline, identifying leaks and gas pockets while the line remains in service, minimizing disruption. The SmartBall is designed to travel many miles under a single deployment, making it DWU's choice for transmission mains. Both the Sahara and SmartBall platforms have the capacity to identify both large and small leaks (less than a tenth of a gallon per minute) without disrupting service in the water main.

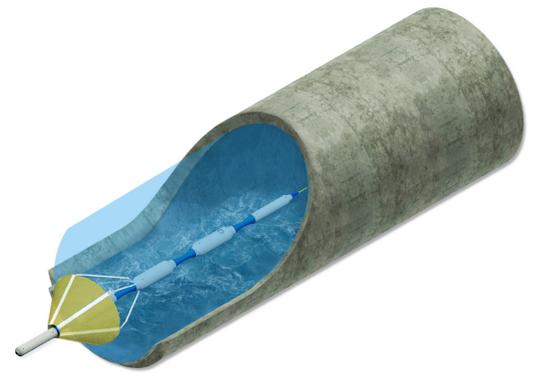
Outcome

By adopting innovative technologies in support of its comprehensive leak detection program, DWU has located and repaired over 285 leaks on its large-diameter mains, leading to a substantial decrease in main breaks and **an estimated water savings of 54 million gallons per day to date***. Fifty-four million gallons saved daily could provide water to an additional 200,000+ new residences, assuming an average use of 7,500 gallons/month per residence.

Since 2008 DWU recognized an almost 50 percent reduction in total water main leaks from 40 leaks per 100 miles to less than 21 leaks per 100 miles today*. DWU has been proactive in repairing identified leaks shortly after inspections, in an effort to conserve water and understanding that the value of water recovered by fixing a leak becomes recurring revenue for the Utility.

In addition to improving non-revenue water loss for Dallas Water Utilities, Xylem has provided recommendations for ongoing monitoring and maintenance of the City's pipelines, arming DWU with powerful new insights and empowering them to make the best capital and operating decisions going forward.

That's the power of decision intelligence.



The Sahara tool is drawn by the product flow and is tethered to a data acquisition unit on the surface, giving the operator close control to confirm leaks.



The SmartBall tool rolls along with the flow of pipeline, identifying leaks and gas pockets while the line remains in service, minimizing disruption.

*As of September 2019