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Elk Grove Village Discovers Major Underground Leak Running into Storm Sewer

OVERVIEW

Elk Grove Village, a mixed residential, commercial and industrial community northwest of Chicago, engaged Aquify to improve visibility into their drinking water system to reduce non-revenue water (NRW), maintain compliance with Illinois' water loss regulation, and improve operational efficiency. In October 2019, 14 Trimble flow and pressure sensors were installed at strategic locations throughout their network to create four virtual zones, also known as District Meter Areas (DMAs). The Village started benefiting from the system immediately.



Excavation to repair leak discovered by Aquify's system analysts

Advanced leak detection system prevents major water loss producing \$300,000 savings for Village.

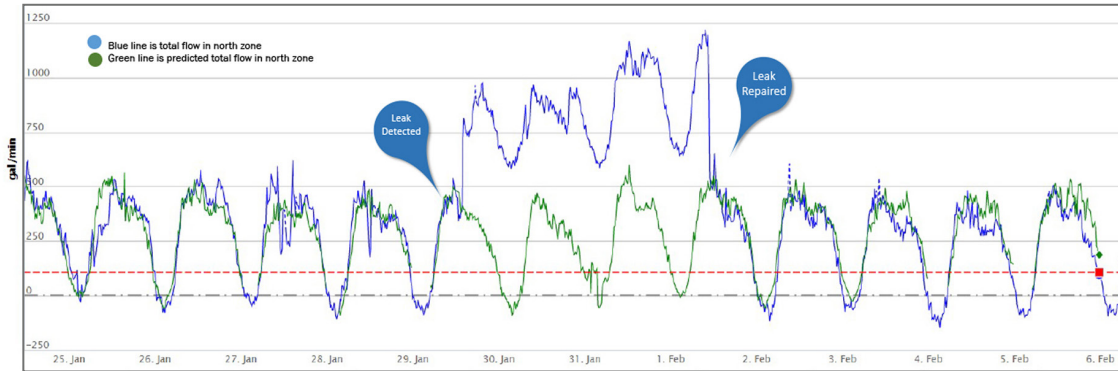
CHALLENGE

Chicago's harsh winters can quickly lead to water main breaks on distribution systems. Some leaks may surface and be called in by local residents, but many leaks run into storm sewers, creeks, rivers or culverts and are therefore unseen.

Lack of visibility to these leaks can lead to significant water loss and unnecessary expense as these leaks can go undetected for months or longer.

SOLUTION

Just after 4 a.m. on a cold Saturday morning in late January, the Aquify 24/7 network operations control center identified a large increase in flow in Elk Grove's East-Central zone. A large flow increase can indicate a potential main break. One of Aquify's data specialists quickly contacted Bryan Grippo, the village's water superintendent, alerting him of the potential break and providing him with a localized search area within the zone where the break was likely to be located.



The water utility team went to work looking for the break in the search area and found muddy water in a drainage ditch feeding into two large, 36" diameter storm sewers. Checking the storm sewers nearby confirmed they were running much higher than normal. Now that they had confirmed the break, they turned their search to locating it by checking for increased flow in the storm sewers upstream of the location. Once they identified where the sewers started running, they used traditional acoustic leak detection methods to pinpoint the break for excavation and repair.

RESULTS

The break location turned out to be nearly a half-mile north of the drainage ditch where they encountered the only visible clue about this otherwise underground flood.

The break, which was leaking at a rate of 400 gallons per minute could have cost the village \$300,000. Because the leak was flowing directly into the stormwater system, it produced none of the surface-level indications that typically signify a leak, such as pooling or gushing water, or excessive ice buildup. Discovering the leak without Aquify's monitoring system would have been extremely difficult.

"This new technology helps us figure out what is going on underground, so our crews can address issues in the system while they are smaller and more manageable," said Colby Basham, Director of Public Works.

“ While the long-term benefits of Aquify's advanced monitoring system were clear, we are excited to be seeing results so soon. The benefit of these early interventions will compound and produce significant cost savings for the Village. Ultimately, this system will not only benefit the community financially, but also help create a more sustainable future. ”

~ Mayor Craig B. Johnson