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# Elk Grove Village, Illinois Salt Creek Pipeline Inspection

## OVERVIEW

Illinois' Elk Grove Village had a critical piece of piping that they assumed needed refurbishment. Before they proceeded with the project, they sought data to validate their assumption. That's where Aquify came in and saved the water utility almost a quarter million dollars.



## CHALLENGE

Elk Grove Village has approximately 80 feet of 12 inch cast iron pipe that was suspected to have structural integrity issues as it runs under Salt Creek. The 60-year-old pipeline had never been inspected, so its condition was unknown. As one of a few mains connecting segments of the distribution system on either side of the creek, there are extreme consequences if a section of the pipeline fails.

Replacing the pipeline was not favorable due to its criticality and challenges related to its accessibility. Therefore, the Village budgeted \$150,000 to rehabilitate the pipe by using a Cured in Place Pipe (CIPP) lining to extend the life of the pipe and gain confidence in the pipe's resiliency and reliability.

Prior to moving forward on the rehabilitation project, the Village was in need of data to validate the feasibility of the CIPP lining technology. The Village also needed to find fittings in order to ensure that their distance was 10-15 feet apart so that the CIPP lining could unwrap properly. The parameters that determine the suitability of the technology are the availability of access points, which were unknown, and the pipe configuration.

## SOLUTION

Prior to presenting their concern regarding the CIPP lining product to Aquify, the Village had consulted a respected pipeline inspection company for a solution. The service provider proposed a technology which involved the deployment of a free-swimming inspection device capable of capturing acoustical data only.

## SOLUTION (continued)

The proposal proved to be cost prohibitive at approximately \$80,000. It was also concluded that the technology would not yield sufficient insight or reliable data to proceed with the lining project.

Having expertise in this field, Aquify was able to identify an alternative technology that would provide a more cost effective solution of approximately \$11,500, a savings of \$68,500 compared to the initial proposal from the other pipeline inspection company. Above all, the solution would yield reliable results to inform the decision-making process.

## RESULT

The chosen technology was the Investigator, a multi-parameter tethered inspection tool with a camera for visual assessment, a hydrophone for acoustical data, and a sonde for pipe tracing and accurate positioning of a confirmed leak above ground. The system, suitable for pipes four to 12 inches in diameter, can be inserted under pressure making decommissioning of the line not necessary.

The solution also provided ample coverage to complete the project successfully as it's capable of inspecting up to 300 feet both upstream and downstream of the insertion point. In order to insert the device into the pipe, a four-inch hot tap was required, which would also serve as an access point for Aquify's electromagnetic flow meter for permanent network monitoring. Ace Pipe Cleaning, a water and wastewater service provider based in Kansas City, Missouri and a division of Carylton Corporation, was subcontracted to execute the inspection and the Village conducted all necessary enabling work.

Upon inspection, the Village discovered that they did not need to rehabilitate the pipeline and was able to defer the capital that was planned for the project. This is particularly beneficial to the Village as it needed to cut costs due to the economic impact of the COVID-19 pandemic.

In total, they saved \$218,500 and now have more confidence in the structural integrity of the pipe and its low likelihood of failure.

The positive outcome materialized after the inspection. Ace Pipe Cleaning obtained a distance of 150 feet and provided visual verification of the location and condition of the fittings required to facilitate lining. They were also able to confirm that there were no acoustic anomalies present in that particular section of pipe. Better yet, the 60-year-old pipe appeared to be in pristine condition -- it was smooth with no evidence of corrosion, scaling, sedimentation build up, or leaks. There was minor tuberculation on the joints, but nothing that would warrant a project on the scale that was originally planned.

This is a perfect example of how age is not always a reliable indicator of a pipeline's condition.



The multiparameter tethered inspection tool is lowered into 12 inch main