



Guaranteeing Quality Water Erie, Pennsylvania

The Erie Water Works, incorporated in 1865 as the Erie Water and Gas Company serves 52,000 customers daily pumping millions of gallons of water. The objective then and the objective now is to guarantee a continuous, uninterrupted, reasonably priced supply of quality water to its customers which assures public health while promoting regional stability and future development. The single pump log system of 1840 has developed into a sophisticated network with customer satisfaction at the core.

In 2009, Erie Water Works embarked upon a comprehensive program to enhance the water system. The phased program included the inspection and assessment of water valves and hydrants, the collection and integration of data related to valves and hydrants, a hydrant flushing program called Unidirectional Flushing and water sampling. Erie Water Works chose Wachs Water Services as their system enhancement partner.

The first task in the enhancement program was to inspect and assess valves and hydrants in specific areas. 594 valves were inspected and assessed. Today, 81% or 486 valves are in good condition, they operate properly. Another 71 are in fair condition requiring a slightly higher torque. Operability is 94%.



Geared Gate Valve #5084 Now in Good Condition

Hydrants were inspected and assessed in a parallel manner. By January 1, 2010, a total of 197 hydrants were inspected and assessed then pressure and flow tested. Erie Water Works has only 3 hydrants under repair at the time of this case study.

Today, following repairs and rehabilitation, Erie Water Works enjoys 96% operability in the areas worked. This significant operability directly relates to improved water quality, lower energy consumption and the elimination of the need to buy new assets.

Guaranteeing Quality Water

Erie, Pennsylvania continued

Erie Water Works utilizes a data management system. This system affords the utility the ability to manage its system electronically by knowing the operability, condition and location of every asset impacting the delivery of water. Data on the condition of valves and hydrants was uploaded into the system as step two (2) of the project. Following the inputting of data, the utility analyzed the data to ensure its accuracy.

After ensuring accuracy, Erie Water Works was able to model the information defining and developing scenarios that may negatively impact the system. Additionally, the utility was able to model activities to simulate system growth and improve customer satisfaction.

One such modeling activity was the development of a Unidirectional Flushing Program or UDF. UDF is a sequential flushing program designed to improve the quality and flow of water in the distribution system. UDF functions best when information is known and validated as to the condition and operability of valves and hydrants. In UDF only certain valves are operated to achieve flow rates to scour pipes. Because UDF is controlled and sequential, less water is used. Through modeling, Erie Water Works determined more information was needed to perform UDF successfully.



Hydrant Pressure and Flow Test

Resulting from the inspection, assessment and repair of water assets, the accurate collection of data with timely analysis and the ability to model information, Erie Water Works has created a solid foundation to manage the distribution system efficiently and effectively. Further, the utility has streamlined their work order management system and leveraged repair and rehabilitation expertise throughout the system.