

The Roanoke Utilities Board: Water Service Improvements

By: Greg Thompson

The members of the Roanoke Utilities Board in Roanoke, Alabama faced a situation similar to those experienced in many small communities. Customers complained of “dirty water.” Jars and jugs filled with samples of the tainted water were brought to the Board. Customers said this dirty water often ruined their clothes and stained their fixtures.

With the economic recession, increasing operational costs and significant number of customer complaints, the Board was in a perfect storm. Most Board members were life-long, multi-generational residents of Roanoke, and they were determined to solve the problem and serve their neighbors in the best way possible.

Assessing the Situation

The Board asked AME Engineers of Montgomery, Alabama to assess the problem and make recommendations. AME first evaluated the Roanoke filter plant to ensure operations, chemicals and dosing was properly conducted for iron and manganese removal.

AME then recommended developing and implementing a flushing program. Unfortunately, flushing could not be properly conducted using isolation and velocity control because the distribution system lacked valves in key locations.

Through all of this, the dirty water complaints continued to mount.

Furthermore, the lack of valves hindered maintenance and emergency repairs. Many emergency repairs had already been made due to leaks that were a result of the deterioration of the old cast iron pipe. These emergency repairs had revealed that there were extreme amounts of scale buildup in the old cast iron mains. After much deliberation, the Board made the decision to replace the old cast iron lines.

Project and Risks

The Board proactively mapped the locations of complaints and existing water lines in the area. They determined a specific project area and scope. The total cost of the project was approximately \$3 million. The \$3 million project was financed using USDA funding with a 42% grant and a long-term loan.

The lack of valves in the distribution system made water line replacement both difficult and risky. AME determined that the use of insertable gate valves installed throughout the distribution system would enable repairs under full-line pressure, reduce risks by limiting the water loss in the event of a main break and offer increased operational options, including an effective flushing program.

A Better Fit

After thorough research, AME chose the Team InsertValve™ for this special project. Because of the extensive scale buildup in the cast iron pipe, other insertable gate valves simply would not work. Other valves rely on the pipe body to attempt a seal. For this reason, the Team InsertValve™ was a better fit.

The primary advantage of the full-body Team InsertValve™ is that it seals onto the valve body itself instead of using the host pipe to seal. This proven feature provides a clear, unobstructed waterway that enables the repair of existing pipes or the installation of new pipes under full-rated working pressure.

Brent Wilson, field supervisor of the Roanoke Utilities Board, said, "I really like the complete shutoff feature of the Team valve, and the fact that it provides a permanent full-functioning valve for way after I retire."

Additionally, the InsertValve's technology accommodates full water and wastewater system hydraulic forces, up to 250 psi. This innovative valve meets ANSI/AWWA C515 material standards and eliminates backflow contamination, purging and bac-t hits. It orients in any position on any type of pipe, including ductile iron, steel, cast-iron, AC and PVC. Coated on the inside and outside with NSF-61 epoxy, the durable ductile iron construction maintains strength of the existing infrastructure.

Ronald Cameron, chairman of the Roanoke Utilities Board, said, "We are thankful to have found a product that works well for these old pipes."

A capital improvement project of this magnitude is both costly and full of risks. However, the risks were mitigated with the Team InsertValve™. Seventeen of the 36 proposed InsertValves™ have been installed to date. Moreover, approximately five miles of old pipes and 250 water services have been replaced under this project, all under live installation.

"It is great to have customers complimenting the quality of water now being delivered through our system. Thanks to the Team InsertValve™ for meeting our needs," said Jerry Revis, general manager of the Roanoke Utilities Board.

About the Author:

Greg Thompson joined AME Engineers in 2001 where he is now part owner and project manager. He graduated from Auburn University in 1999 with a Bachelor of Science Degree in Civil Engineering. His experience in the municipal utility market has focused on unique solutions for medium and small municipalities throughout Alabama. He has earned respect and friendship from clients through his calm and budget-conscious approach to problem solving. He resides in Montgomery, Alabama with his wife and two daughters.