



**KEYSTONE**  
CONSULTING  
ENGINEERS

# PROJECT PROFILE

## Village of Bowers Water Main Replacement Project

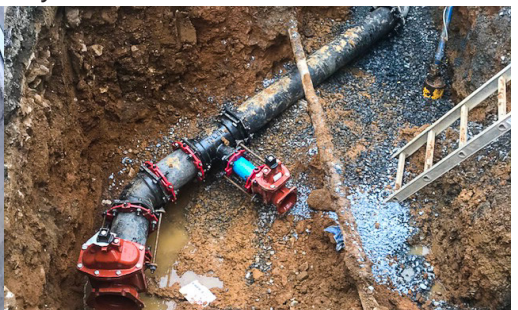
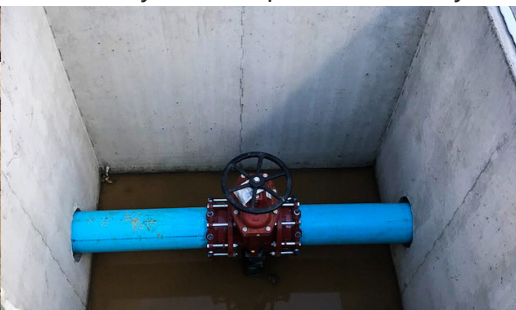
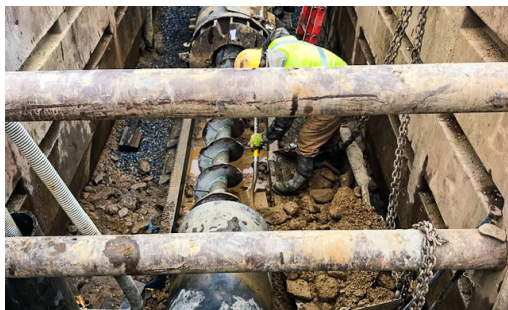


Keystone Consulting Engineers, Inc. (KCE) designed the water main replacement project for Maxatawny Township Municipal Authority in 2020. The project was sponsored by the United States Department of Agriculture, with funding through a Rural Utilities Service (RUS) program, and included the replacement of over 9,000 feet of existing two and three inch plastic, galvanized steel, and cast iron main line with new eight inch coated ductile iron, C900 PVC and HDPE main line, along with fire hydrants, valves, water services, and appurtenances. The project was constructed under PA-One Call Complex Project guidelines.

A variety of installation techniques were used, including open cut installation, jack and bore/casing pipe installations, and horizontal directional drilling (HDD) installation. The PVC main was equipped with a tracer wire system for future location detection, including PEXa water services with tracer wire to the public right-of-way lines.

The project required several different permits including a PennDOT HOP, DEP GP-5 Stream Crossings, and Berks County Conservation District Erosion and Sedimentation Control Permits. During construction, KCE provided project management and inspection services, working through a variety of issues including limited information regarding location and nature of existing utilities, limited water supply and pressures due to limitations of the existing system, and extensive leakage from the existing aged and deteriorated water mains. Final bituminous roadway restoration included permanent trench restoration with a micro surfacing overlay.

**Location:** Maxatawny Township, Berks County, Pennsylvania



Bethlehem (Northampton County)  
2870 Emrick Boulevard  
Bethlehem, PA 18020

Allentown (Lehigh County)  
5012 Medical Center Circle, Suite 1  
Allentown, PA 18106 863

Kresgeville (Monroe County)  
863 Interchange Road, Suite 101  
P.O. Box 639  
Kresgeville, PA 18333