Grace Under Pressure

Trenchless rehabilitation of a 24-inch diameter waterline serving an ever-growing community

Housing demand is at its highest in decades. Infrastructure once placed for growing cities is now being called upon to serve long-awaited residential communities. Now is the time to test their integrity and engineering design.

A small town on the outskirts of Arizona with an ever-growing community was faced with challenges when a 200-LF, 24-inch potable water pipeline built in the early 2000's and laid to rest, was called upon to serve the community. The problem? The pipeline was pressure tested again and again, and failed.

Dig and replace? In this case, the pipe navigated above and below major utilities and multiple jurisdictions making replacement a feasibility and bureaucratic nightmare.

Until 2022, pressure pipeline rehabilitation liners were limited to a maximum of 20-inch diameter. For a pipe designed to serve a growing community, reduction is not an option.

CPM Pipelines' BulletLiner System™ FFRP to the rescue. NSF 61 approved, semi-structural Class 3, 2-inch to 48-inch diameter, and provides 5-year warranty and 50-year design life. Trenchless rehabilitation avoided environmental and economic impacts, permitting, and eliminated capacity reduction. This was the first of its kind large diameter pressure pipe rehabilitation project in the U.S.

Planning was a necessary and critical phase, but execution was where the rubber met the road. Four excavation pits (two per segment) were bullseyes. Additional coordination and permitting was avoided by maintaining digs inside proper jurisdiction. Pits landed outside bends, leaving enough pipe in the trench to install the liner and termination fittings. BulletLiner System™ not only navigated the alignment changes, but fully opened to its circular shape when inflated inside the host pipe.

BulletLiner System™ allowed a problem to be solved in weeks rather than months, and the community continues its prosperous growth.