

Dare County, NC Repairs Leaking Water Main by Sliplining with Fusible PVC[®] Pipe

Dare County, North Carolina is a vacation hotspot lined with miles of white sand beaches and family attractions, including the Wright Brothers National Memorial. But without fresh, potable water, the community would be severely constrained and economically damaged. Therefore, when a leak developed on a main 24-inch feed to the Outer Banks on Roanoke Island, the County Water Department needed a plan and Fusible PVC[®] pipe provided a welcome solution.

The 24-inch transmission main connects the Skyco Water Treatment Facility to the North Beach Reverse Osmosis Water Treatment Plant. The two systems are able to operate independently. During the peak summer season, however, the additional treatment capacity from Skyco is necessary to meet demand. The damaged transmission main was determined to be leaking under an embankment of the Washington Baum Bridge over Roanoke Sound. There was no possibility of a spot repair, so Dare County Water Department investigated sliplining with Fusible PVC[®] pipe. The closest access points required over 1,300 LF of sliplining.

According to Chip Herom, Assistant Utilities Director of Dare County Water Department, the project timeline developed in this manner:

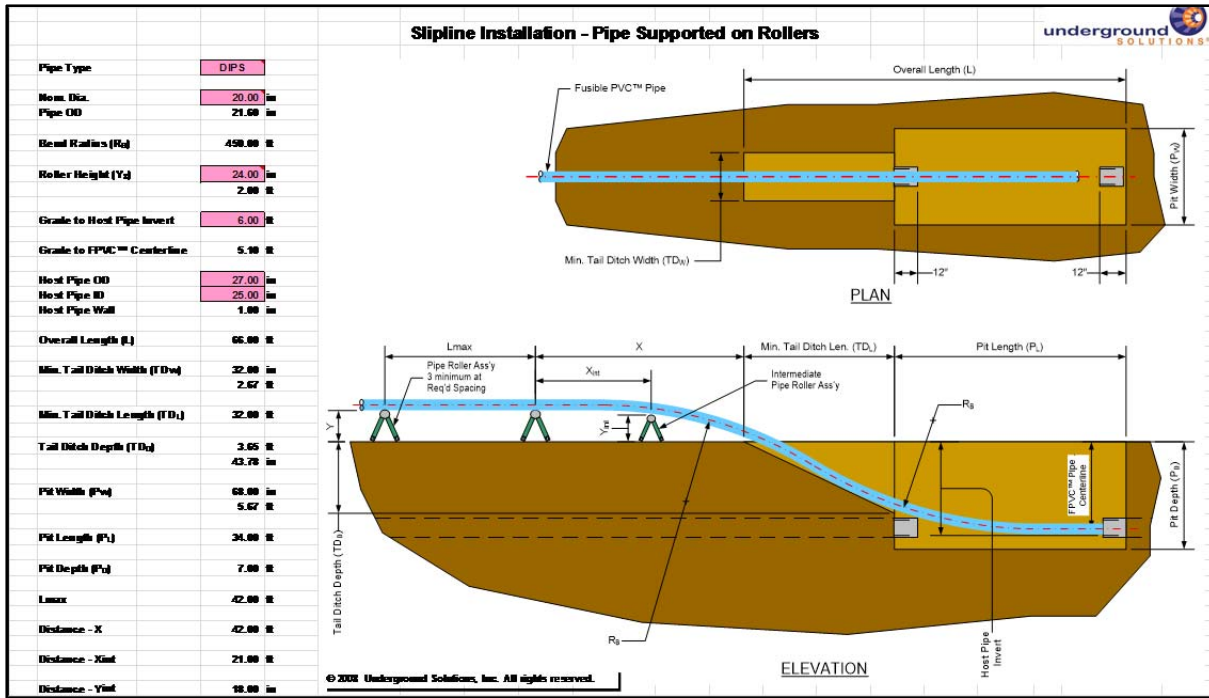
- October 7, 2013: A leak in the 24-inch water main is discovered.
- October 11, 2013: Dare County contracts for pipe and fusion, general construction services, and specialty sliplining services.
- October 15, 2013: Fusion of 20-inch Fusible PVC[®] pipe begins.
- October 18, 2013: Fusible PVC[®] pipe is pulled into place through 1,320 LF of 24-inch ductile iron pipe.
- October 22, 2013: Water main is placed back into service.

Pipeline Details and Project Summary

Project:	Dare County Emergency Slipline
Owner:	Dare County Water Department
Length:	1,320 LF
Pipe Size:	20" DR25 Fusible PVC [®] Green
Pressure Test:	150 psi
Project Manager:	Chip Herom, Dare County Water Dept.
General Contractor:	Basnight Construction
Specialty Contractor:	KRG Utility

Dare County Water Department acted as project manager, hiring and directing all of the contractors involved over the two weeks of construction. Chip Herom said: "This project was an amazing testament to the commitment of everyone involved. In my 20 years' experience in the water industry, this was the most efficient project I have been involved in."

Herom further remarked: "The County was familiar with the concept of sliplining an existing pipeline, but had never done it on a major water main, particularly under duress. Fortunately, we assembled a great team and were able to manage the project from initiation through testing and disinfection in a matter of only 15 days. Basnight Construction provided the on-site general contractor duties while KRG Utility Incorporated provided the specialty sliplining services. The performance of Underground Solutions' team to provide pipe and fusion services and assist with technical details was certainly a major advantage to us. We would not hesitate to use their product and services again."



Technical Analysis Translated Into Practice

Underground Solutions' engineering staff provided the installation guidance above to Dare County Water Department during construction. The result was a smooth pullback as depicted below.



Underground Solutions (UGSI) provides infrastructure technologies for water/wastewater applications. UGSI's Fusible PVC[®] products, including Fusible C-900[®], Fusible C-905[®] and FPVC[®], contain a patented PVC formulation that, when combined with UGSI's patented fusion process, results in a monolithic, fully-restrained, gasket-free, leak-free piping system. UGSI's Duraliner™ is a patented, close-fit pipeline renewal system creating a stand-alone structural liner.