



Proactive Planning Protects Critical Pipes and Reaps Bigger Benefits



Background

Durham is a bustling community, home to UNH. All wastewater flow from the Town and University is conveyed by gravity to the 7.4 MGD Dover Road pump station and via a 3,000-foot AC force main, through wetlands to the treatment facility. The criticality of this force main was the highest of all Town pipelines due to the absence of redundant piping and inaccessibility for maintenance, with the Consequence of Failure rating as “very high.”



Public/Private Collaboration

Early identification of critical pipes and coordination with a private development project reaped broader benefits for all stakeholders: shared construction cost of a joint trench for new force main and water main; creation of convenient connection points for the new force main; reduced disruption to traffic on busy Route 108 by accomplishing both utility replacements at once.



Project Challenges

Multiple factors contributed to project challenges: extensive permitting due to wetlands and conservation areas; geotechnical conditions requiring extensive blasting along NHDOT ROW; public outreach campaign to facilitate residential utility reconnection efforts; careful construction sequencing to keep residents online during utility construction; nimble construction management to avoid schedule delays and cost increases.



Innovative Joint-Trench

Utilization of a joint trench for advanced installation of a new 400-foot force main and a new 8-inch HDPE water main provided redundancy of critical utility infrastructure. Taking advantage of an already open trench to install parallel pipes optimized project outcomes. A highly flexible HDPE pipe, with fused joints for added strength, was used to accommodate the geotechnical requirements of placement along the riverbed.



Enhanced Public Awareness

“A good model for other towns to follow” was the quote in a recent Foster’s newspaper article about the importance of investing in infrastructure. The project also included design of a new low-pressure system to allow multiple residences to transfer their discharge points from the existing force main to the new force main without service interruption.

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Owner & Location Town of Durham, NH
Design Engineers Wright-Pierce - Portsmouth, NH
Contractor Sargent Corporation - Stillwater, ME

