



Project Profile

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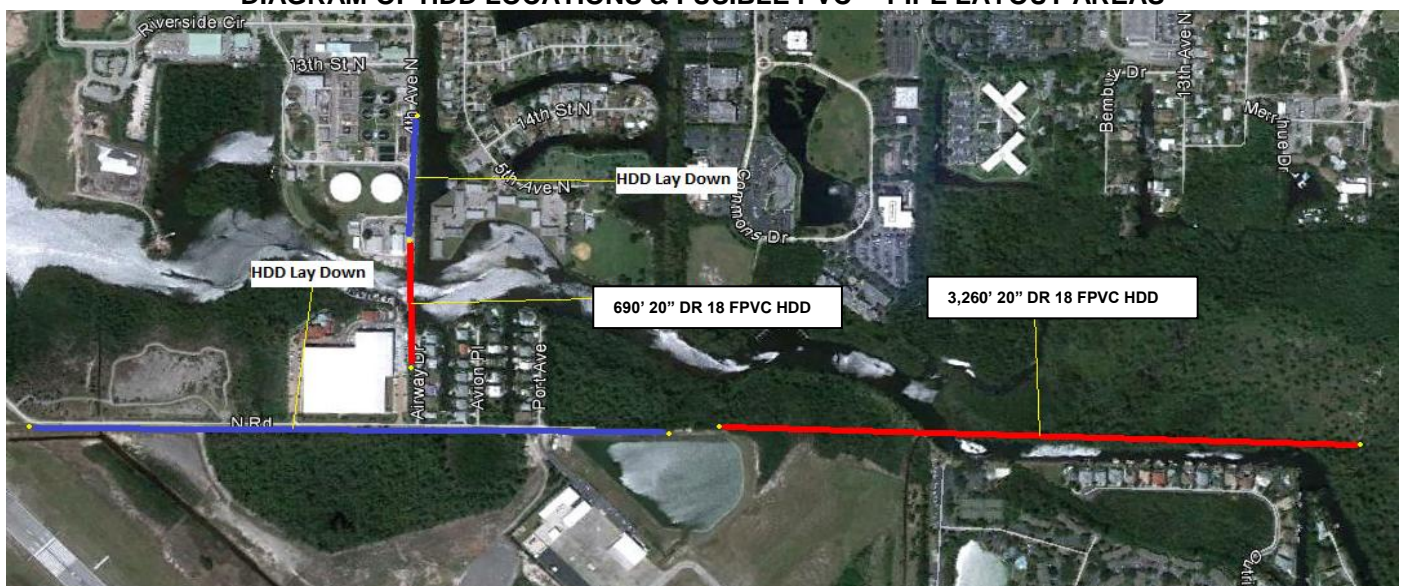
City of Naples, FL Utilizes Horizontal Directional Drilling with 20" Fusible PVC™ Pipe for 690LF and 3,260LF Crossings of Gordon River

Naples is a crown jewel of Southwest Florida. Nestled on the sun drenched beaches of the Gulf of Mexico, Naples boasts one of the nation's best sandboxes, with some of the calmest seas and challenging golf courses. The City's Utilities Department provides water and wastewater services to over 65,000 residents and tourists within the 33 square mile service area. As part of their mission to efficiently maintain the public water, sewer, and irrigation infrastructure, Utilities personnel teamed with CDM Smith engineers to develop a plan for pumping supplemental water from the Golden Gate Canal to the City's 10 MGD Advanced Waste Treatment (AWT) Facility via a two mile, 20-inch PVC pipeline. This project was part of the Integrated Water Services Plan adopted in 2008 to mitigate the impact of increased irrigation that is expected to reduce available potable water by 25 percent. The raw water transmission main alignment required crossing environmentally sensitive wetlands along the Gordon River and a subaqueous crossing of the river near the AWT Facility.

After evaluating the geological conditions and considering both HDPE and Fusible PVC™ pipe for the directional drilling requirements along and under the river, CDM Smith recommended Fusible PVC™ pipe as the basis of design for the 3,260LF bore under the wetlands and a 690LF bore under the river. It was determined that Fusible PVC™ pipe enabled the bore pipe size to be minimized, which contributed to significantly lower risk and cost versus HDPE for the major directional drill under environmentally sensitive wetlands near the Gordon River.

The project presented significant logistical and environmental challenges due to the pipeline alignment that runs adjacent to the Bear's Paw Golf Course, followed by a nearly 3,300LF HDD from Bear's Paw property to the Naples Airport property, finishing with a subaqueous crossing bore from a residential area under the river to the City's AWT Facility.

DIAGRAM OF HDD LOCATIONS & FUSIBLE PVC™ PIPE LAYOUT AREAS



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.



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According to Bob Middleton, City of Naples Utilities Director, “This was a very high profile project and a critical piece to meeting the reclaim water needs of our community. We had no previous history with Fusible PVC™ pipe, but having a proven track record of significantly longer bores than our project required made us comfortable with CDM’s recommendation to utilize it. We appreciated the active role Underground Solutions took on both HDD’s and won’t hesitate to consider Fusible PVC™ pipe for other projects.”

Project Summary

Owner:	City of Naples, Florida
Project Name/Date:	Golden Gate Canal Intake & Transmission Main
Pipe Size & Installation:	20” DR18 FPVC® by HDD, 690LF and 3,260LF
Design Engineer:	CDM Smith, Ft Myers, FL – Gina Cashon, P.E.
Utility Contractor:	Stevens & Layton, Inc – Ft Myers, FL
HDD Contractor:	Utility Services Authority, LLC – Belleville, MI



Keith Dean, President of Stevens & Layton, stated: “We had done smaller projects in the past with Fusible PVC™ pipe, but the long bore on this project was a real test as the ground conditions varied tremendously and required passing through very hard limestone. UGSI provided very professional support; from helping us switch sides for drilling and pipe layout to their onsite fusion technicians and construction support manager. Our confidence with Fusible PVC™ pipe has definitely grown based on how it performed on this project.” Utility Services Authority (USA) had installed Fusible PVC™ pipe numerous times over the past five years, but this was their longest drill with it to date. Chris Lamb, USA Regional Manager, commented, “Our guys were impressed with the ease with which Fusible PVC™ pipe pulled on the long bore. With the pull completed in less than ten hours, we couldn’t have been more pleased. With this experience, we’re ready for even longer pulls with Fusible PVC™ pipe.”



3,260LF 20” FPVC® Layout Adjacent to Airport



690LF 20” FPVC® Layout on Rollers



Emergence of FPVC® from HDD pit

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