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BUILDING COMMUNITY



HDPE IS THE SECRET FOR LOW-COST WATER PROJECT IN GEORGIA

Dalton Utilities Rehabilitates County Water Infrastructure with Over Four Million Feet of HDPE Pipe

DALTON, GA -- When the construction company W.L. Hailey bid a Dalton, Georgia, water infrastructure job at \$19.8 million, (\$5 million under the next closest bidder) everyone thought they were crazy. When they said they could do it in one year instead of four, everyone knew they were nuts. Now that they have completed the job two months early, everyone is asking, "What's their secret?" The "secret" is the confidence to know you can lay almost a million feet of pipe in less than a year.

"A lot of people have asked us how it feels to leave \$5 million on the table," said Brent Dillahunty of W.L. Hailey. "I just tell them that you can be the second bidder on every job that comes up, and it just means that you're out of work."

The project was the second phase in a county-wide rehabilitation and expansion that will total over four-million feet of high density polyethylene pipe (HDPE) for water and bring water service to every public road in Whitfield County

Over the years, Dalton Utilities has had a number of problems with their piping system including corrosion, joint leakage and

infiltration. This aging infrastructure, as well as the need to remove outlying areas from wells that are providing poor water, is the motivating factor for the expansion and rehabilitation.

The fast completion date of W.L. Hailey's bid was what really sweetened the pot. The expansion portion of the project will add 6,000 new customers to the city's water system. A three-year earlier completion date means three additional years of collecting new revenue for Dalton Utilities.



Fast and leak-free installation of HDPE pipe enabled Dalton to quickly add revenue from new services.

Dalton is the carpet capitol of the world. Almost 90 percent of the functional carpet produced worldwide is made within a 25-mile radius of the city. Carpet mills use high volumes of water and, with over 38 million gallons per day, Dalton ranks second only to Atlanta in flow capacity for the state of Georgia.



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Dalton Utilities first used HDPE in their gas distribution system and loved its intrinsic trenchless capabilities. Their wastewater collection system also needed upgrading from clay and iron pipelines that were deteriorating badly. Infiltration of groundwater into the wastewater pipes created too much flow for the treatment plant to handle. HDPE was used along with pipe-bursting methods to create a monolithic structure and also upsize the system. They then used about 65 miles of the pipe on a land application system to distribute treated wastewater through an extensive irrigation-piping network. The success of HDPE was solidified when the project was completed a year ahead of schedule and it became the obvious choice for Dalton's water distribution system.

Several Dalton city officials traveled to Indianapolis to learn from Indianapolis Water Company (IWC), which is reported to be the single largest user of HDPE for water transmission and distribution systems in the U.S. IWC began using HDPE in the fall of 1992. The first HDPE installation projects exclusively employed horizontal directional drilling in an effort to reduce restoration costs in existing established residential areas.

Since then, IWC has increased its use of HDPE and expanded on its methods of installation to include conventional open trench installations along with horizontal directional drilling in a variety of applications. Indianapolis engineers shared their thoughts on HDPE and their installation guidelines and were helpful in answering many questions for Dalton Utilities.

"The engineers for Indianapolis were pretty much the pioneers for using polyethylene on a large scale in the water industry," said Steve Bratton of Dalton Utilities. "They were extremely happy with polyethylene, so we installed 750,000 feet of HDPE for the first phase of the project and went from a leaking, corroded system to a completely fused homogenous system that won't corrode."

As the low bidder on an aggressive schedule, W.L. Hailey knew they would need to maximize efficiency. According to Monte Beasley of W.L. Hailey, "We determined early on that additional fusion equipment made up for the expense by saving time."

Hailey purchased a total of 19 fusion machines for the project. Beasley explained that one crew could operate three fusion machines in the same amount of time it takes to run one. "We knew with the extra equipment, we could essentially triple the production from what we had originally estimated," said Beasley.

The process of running additional fusion equipment at the same time is called "piggy backing." While the fusion joint is cooling on the first fusion procedure, there is time to start a second and third fusion joint in additional machines. While the second and third joints are cooling, the first is ready to be moved and the process rotates accordingly.



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said Bratton. “As long as the operator stays within the fusion specifications, polyethylene is an ideal, long-term solution for water infrastructure.”

The Dalton water expansion was successfully completed in 2006.

The Plastics Pipe Institute, Inc. (PPI) is a Texas-based, non-profit organization, founded in 1950, that is the major trade association representing all segments of the plastic piping industry. PPI is dedicated to expanding awareness about plastic pipe systems and promoting plastics as the material of choice for pipe applications. It is the premier technical, engineering and industry knowledge resource that publishes data for use in development and design of plastic pipe systems. Additionally, PPI collaborates with industry organizations that set standards for manufacturing practices and installation methods. For more information about PPI and available information, go to: www.plasticpipe.org.

Strong, fast and reliable fusion joining of HDPE pipe creates a leak-free monolithic system that will provide clean water to Dalton for decades.

In the water industry, HDPE has historically been used for directional bores under rivers and roads. Dalton has now joined cities like Indianapolis, St. Petersburg, Louisville, Palo Alto, Miami and many smaller cities and rural water districts in using HDPE as a large-scale solution to their water problems.

“It is rare that the longest lasting and most efficient solution is also the least expensive,”