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HDPE PIPE: SAVING WATER AND MONEY IN FLORIDA

St. Petersburg Water Systems Use Leakless HDPE Pipe to Preserve Precious Water

St. Petersburg, FL – Water and budget shortfalls are on the minds of many water officials across the nation. While most are scratching their heads wondering what to do, one unruffled water utilities manager is not shy about explaining how trenchless technologies, polyethylene pipe and a well orchestrated plan will not only conserve water, but save his city millions.

Joe Towry, manager of the Water Systems Maintenance Division for the City of St. Petersburg, Florida, is in the process of implementing an 18-year, \$100 million program to replace and upgrade the city's aging water system infrastructure.

St. Petersburg has a history of outstanding foresight. The city is home to the nation's first urban reclaimed water project and citizens have the ability to irrigate their landscape without restriction most of the year. Towry's next target is the preservation of the drinking water system. This goal is imperative to the city's future and high density polyethylene pipe (HDPE) is playing an essential role in protecting every drop.

HDPE pipe was first developed in the 1960's for the natural gas industry because of its leak-proof qualities. Today 90 percent of all new underground gas lines installed are HDPE. According to Gas Facts, there are 380,000 miles of HDPE main gas lines and 28 million

service lines in the U.S. Of these, there is an average of fewer than 10 leaks a year caused by something other than third-party damage.



Leakless HDPE pipe being fused to form a jointless monolithic water main system in St. Petersburg.

Progressive water utilities are applying proven and successful technologies from the gas industry such as trenchless construction and HDPE to the water industry. St. Petersburg is leading the way in three activities within the utility, beginning with the potable water system,

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reclaimed water system and the wastewater collection system.

According to the Community Water System Survey, water utilities self-reported leak rates average 13 percent. One study by the International Water Supply Association states that 20 to 30 percent of water never reaches its intended destination. Whichever number is believed, the effects of such high leakage are taking their toll.

For example in 2002, the governor of New Jersey declared a water-driven State of Emergency. While the problems were commonly blamed on drought, the state of New Jersey announced that their water distribution system has a leak rate of 25 percent. It is doubtful the problem would be as severe, if their system did not leak.

“To compare HDPE with other materials solely on price per linear foot is not a proper comparison,” says Towry. “Other items should be taken into consideration like the long-term investment. Leaks are expensive, if I can spend an extra three dollars today that will save the city \$100 in the future, I have done my job well.”

Perhaps the strongest advantage of PE is how it is joined together. The pipe is heat fused together creating a joint that is as strong or stronger than the pipe itself. With no real joints, the pipeline becomes a true monolithic structure that has no weak link. The life cycle of the system is then based on the material and not the connecting points. The only chance for leakage comes from third-party damage.

Towry explained there is a considerable laundry list of concerns associated with residential neighborhood pipeline construction.

Many of the areas in St. Petersburg have been classified as historical preservation areas with brick streets, granite curbing and hex block sidewalks. Removal and restoration of these assets using conventional open cut construction techniques within historical areas, comes with a considerable price tag.

Horizontal directional drilling (HDD) is performed by drilling a hole down for a distance and then horizontally for however far the pipeline needs to travel. Polyethylene pipe is then pulled into the hole.

“PE is tough enough and flexible enough to withstand the stresses placed on it during the pull back,” said Towry. “Everywhere it is feasible, we use HDD procedures. Not only is it the least intrusive, it is the most economical.” HDD techniques provide little disturbance to streets or sidewalks and eliminates much of the expense of replacing asphalt.

“The city of St. Petersburg is ahead of the curve when it comes to water infrastructure,” said Frank Lopez, HDPE product specialist with HD Supply in Tampa. “They are looking into the future and designing a system that will withstand the test of time.”

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.