



## CITY OF DAYTONA BEACH RACES AHEAD WITH NEW PRODUCTIVITY TOOL

In June 2008, a 16-inch-diameter cast iron water main ruptured in Daytona Beach, Florida. The main, one of three that service nearby barrier islands and beaches, was 61 years old.

The City of Daytona Beach's Utilities Department sought a speedy solution to the ruined main that had put additional stress on two remaining water mains, both of which are also 50 to 60 years old.

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The repair needed was critical. An Agenda Summary available through the City of Daytona Beach stated that "considerable additional stress" was placed on the remaining two mains and that because of the age of the mains crossing the Halifax River, there was "considerable uncertainty as to how long the two currently serviceable water mains would be able to sustain the increased stress levels of an extended emergency."

City officials decided to enlarge the main to approximately 24 inches of inner diameter to accommodate anticipated growth and redevelopment on the beach side and barrier island. The new line crossing was placed 1,500 feet south of the existing line that ruptured due to constraints on space available for layout.

Utility Services Authority LLC (USA) won a bidding process for the \$1.5 million Earl Street Water Main Replacement project that included directional drilling and pipe installation underneath the Halifax River. The bidding process included multiple pipe material options, with high-density polyethylene (HDPE) pipe getting the winning nod.

"We will always bid multiple materials to be good stewards of the public's money," said Frank Van Pelt, project manager for the City of Daytona's Utilities Department Engineering Division. "We chose HDPE because it has a better bend radius for our layout area."

The bend radius of the pipe was important as the city allocated a very small footprint in a city park adjacent to the Main Street Bridge out to the barrier island. As the 50-foot

sticks of HDPE were fused together, they were pulled along a street running parallel to the Halifax River, almost at a 90-degree angle to the insertion pit. Pipe rollers kept the pipeline from being pulled along the asphalt of the street.

To join the approximately 2,900 feet of JM Eagle 30-inch IPS DR 9 HDPE, Utility Services Authority used a McElroy TracStar® 900, MegaMc™ PolyHorse™ and DataLogger® to perform the pipe fusion operations.

The Daytona Beach jobsite was restricted to a very small footprint in a park area between North Beach Street and the waterfront, which made it perfect site to test a prototype MegaMc PolyHorse. McElroy distributor, ISCO Industries, consulted with USA to get the new product on site.

A stick of pipe is dispensed into the powered rollers of the MegaMc PolyHorse. The length of fused pipe has been pulled and is ready for the next 50-foot stick of pipe to be fused onto the length.

The McElroy productivity tool allows pipe to be placed on a series of racks directly from a delivery truck. At Daytona Beach, the MegaMc PolyHorse held a shift's worth of fusion work, keeping the pipe stored in a location where it is ready to be used. The MegaMc PolyHorse held 10 50-foot sticks of 30-inch pipe on the rack system that feeds to a dispenser device, and finally, to a pair of powered rollers. One of the rollers features a tracked system that grips and feeds the pipe into the fusion machine, making the fusion process easier on the operator. In tandem, the two powered rollers of the MegaMc PolyHorse help maneuver a stick of pipe up to 24 inches laterally and 34 inches vertically. The device is designed for 20- to 48-inch IPS pipes.

Personnel from Utility Services Authority were excited about the prospect of having the prototype on the job because it frees up heavy machinery, such as loaders and excavators. Additional machinery isn't required to hold and position sticks of pipe in place for fusion operations when using the

MegaMc PolyHorse. Fusion technicians on site were able to release and load sticks of pipe for fusing with the use of the remote control, which directs all of the functions from the carriage of the fusion machine.

Once pipe was ready and in position, a McElroy TracStar 900 was used to butt fuse the pipe into a long, monolithic pipeline. The TracStar proved an advantageous choice on the job, as the fusion operator was able to fine tune the position of the fusion machine underneath the pipe to get ideal placement before beginning the fusion process.

USA started mobilizing for the project at the end of July and completed drilling operations on two separate bores at the end of August 2010. The project was complete by the first of November after open cut, tie-ins and testing operations were successful. Thanks to the use of several McElroy products and the great characteristics of HDPE piping, Daytona Beach crossed the finish line without falling victim to the older pipes rupturing before the new line could go into service.



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### **About JM Eagle**

*With 22 manufacturing plants throughout North America, JM Eagle manufactures the widest array of high-grade, high-performance polyvinyl chloride and high-density polyethylene pipe across a variety of industries and applications including utility, solvent weld, electrical conduit, natural gas, irrigation, potable water and sewage. More information can be found at [www.jmeagle.com](http://www.jmeagle.com).*