

St. Petersburg Initiates An 18-Year \$100 Million Water Main Replacement Program

Municipality strives to implement the latest technologies to keep its infrastructure ahead of the curve.

St. Petersburg – Joe Towry, the manager of the water systems maintenance division for the city of St. Petersburg, Fla., proudly points to a map of the city hanging in his office on an easel as if it were a work of art.

The multi-color-coded map displays detailed information including the age of the infrastructure in each neighborhood along with projected cost for replacement and linear foot descriptions. A quick scan places the totals of pipe in the range of 3 million linear feet. Pipe sizes in the target areas range from 2-inch to 12-inch.

Towry's department is in the process of implementing an 18-year \$100 million program to replace and upgrade the city's aging water system infrastructure. He has taken a methodical approach to the project and uses his background as an analyst to better dissect and understand the city's infrastructure.

"It makes more sense to have an organized plan than it does to spend all of your time chasing," says Towry. "Some of the pipe in this area is more than 100 years old, but in the overall scheme of things, it's not necessarily the highest priority area requiring immediate attention," he added pointing to one area of the map. "Here is where we have the more prevalent concern and need."

Towry has systematically gathered information through his citywide Leak Management Program for each quadrant of the city. He knows exactly how many times his repair crews have been in each neighborhood to fix leaks and concentrates on replacing the pipe in the problem areas.

"Once I determined where our greatest problems existed, it was easy to prioritize the long and short-term replacement and construction phases of the 18-year program," he said.

St. Petersburg has a reputation of being forward-thinking. The city is home to the nation's first urban reclaimed water project and citizens who participate in the program have the ability to irrigate their landscape, without restriction, most of the year.

The reclaimed water project is a big part of the water conservation efforts in St. Pete, but number one on Towry's list is the preservation of the drinking water system. This goal is imperative to the city's future and one of the forward-thinking tools that is playing a significant role is high density polyethylene (HDPE) pipe.

HDPE was first developed in the late 1960's for the gas industry because of its leak proof qualities. Today 90 percent of all new underground gas lines installed are made of HDPE because of its leak free qualities and low maintenance.

While incremental improvements to the nation's water distribution systems have been made over the last 100 years, many like Towry feel it is time to aggressively implement the latest technologies like trenchless construction and HDPE to the water industry.

"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.”

Towry explained there is a considerable laundry list of concerns associated with residential neighborhood pipeline construction. Many of the areas in St. Pete 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.

Adding to the costs formula are multi-million dollar homes, expensive landscape designs and designer driveways. This is where Towry uses trenchless technology – horizontal directional drilling (HDD) – to his advantage to reduce the number of concerns from area residents and area homeowner associations.

HDD techniques provide little disturbance to streets or sidewalks and eliminates much of the expense of replacing asphalt. 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 ideal for that method because it 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 horizontal directional drilling procedures. Not only is it the least intrusive, it is the most economical.”