

Position Paper
Economic Benefits of HDPE Pipe in Water Infrastructure
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Position

Local officials who oversee potable water and wastewater (water) systems struggle to find the dollars necessary to repair, replace and rebuild their infrastructure. Water systems are aging and the funds available for improvements are dwindling. Decisions regarding a pipe replacement strategy and material selection should consider the total replacement and life cycle cost. High Density Polyethylene (HDPE) pipe systems are resistant to corrosion, leak-free, and are widely recognized as the most cost-effective choice for water applications. At a time when North America's environmental infrastructure faces hundreds of billions of dollars in funding needs and local officials work to stretch available resources to the fullest extent, the Plastics Pipe Institute (PPI) supports public policy that provides ample consideration of use of superior HDPE pipe systems for water infrastructure.

Background

Assessment of the life cycle benefits of different pipe networks requires a detailed analysis of a utility's existing system. "Whole life costs" are the costs of acquiring, operating, and maintaining them from start to finish. In other words, included in the total costs of ownership are:

- Installation costs for building water infrastructure;
- Leakage costs associated with water loss from pipe joints;
- Repair costs for necessary infrastructure refurbishments;
- Replacement costs in cases where refurbishments require replacement;
- Corrosion costs related to pipe failures; and
- Customer service rebates and penalties as a result of pipe failures.

HDPE pipe systems offer economic advantages beginning with manufacturing and continuing through entire service life. Because HDPE pipe requires significantly less energy to manufacture compared to traditional water pipe materials, cost savings follow suit. The lightweight nature of HDPE pipe results in less fuel needed for transport, the need for fewer truck loads, less wear on North American roadways, and lower transportation costs in general.

The same light weight characteristic offered by HDPE pipe also pays off in installation costs. Less weight means longer pipe lengths and less equipment needed to lift and move them during open trench installations. Further, trenchless installation techniques are commonly used for HDPE pipe applications. Practices such as horizontal directional drilling, slip lining, pipe bursting and other trenchless installation methods impose less ground disruption translating into fewer traffic interferences and repair work on North American roadways. All of these benefits translate into significant cost savings for local governments constantly searching for ways to get the most return for their investment.

A study entitled *Life Cycle Analysis of Water Networks* conducted by CSIRO in 2008 concluded that when it comes to conventional pipe materials, "their relatively higher failure rate coupled with their higher leakage rates could result in significant maintenance costs and lost water costs over the lifetime of the pipe network. However, based upon available cost and failure data, polyethylene networks show significantly lower costs throughout their lifetime, and the combined benefits of low failure and water loss rates can potentially result in long-term cost savings."

Local officials must be offered the opportunity to move from "low bid" procurement strategies to an evaluation of life cycle costs as well as encouraged to utilize contemporary pipe materials that reduce overall life cycle expenses. Federal, state, and local policy should reflect that.