



CASE STUDY



conserving water. protecting the environment



CHARLESTON, WV CASE STUDY

LOCATION: Charleston, WV

PROJECT SCOPE: Water main using high-density polyethylene (HDPE)

APPLICATION: Trenchless (slipline) installation of more than 1,000 feet of 20-inch HDPE pipe into a 24-inch original pipe crossing a river

PROJECT DATES: 2002

KEY CONTACT: Ron Belcastro, P.E., Charleston Region Manager



SUMMARY

The Charleston Region of the West Virginia-American Water Company has a budget of \$1 million per year for water main replacements. It's a program that has been in place since 1984. That means Charleston is going on 20 years of constant upgrades and close monitoring of its infrastructure.

A routine checkup revealed a faulty pipeline at one of the region's 20-plus river crossings – corrosion was to blame for a 4-inch leak in a 24-inch diameter ductile iron pipe. The system was unintentionally providing the river with an extra 3 to 5 million gallons of water per day that should have been coming out of customers' taps.

Charleston Region Manager Ron Belcastro, P.E., made the decision to slipline more than 1,000 feet of 20-inch high-density polyethylene (HDPE) pipe into the 24-inch original pipe at a cost of about \$125,000. He estimated that replacing the system would have cost about half a million dollars.

The larger question becomes, if one of the nation's most conscientious municipal water systems is routinely repairing leaks that account for more than 20 percent of its water supply, what's happening in the communities where there's not as close a watch?

According to reports in The Washington Post, about a quarter of the water handled in that city's treatment plants leaks out through a deteriorating infrastructure which can lead to contaminated drinking water and higher water bills for taxpayers. The Washington, D.C. metro area has about 66 million gallons of "unaccounted for" water per day.

But the nation's capital is not alone. The Environmental Protection Agency (EPA) estimates that the U.S. is in need of about \$250 billion worth of infrastructure rehabilitation in cities nationwide. That number has grown from about \$140 billion just three years ago. More information about the costly road ahead for our water pipelines can be found on the EPA's web site <http://www.epa.gov> and on the Water Infrastructure Network's (WIN) site, www.win-water.org.

HDPE pipe is the most logical environmental choice since the joints are fused and there are zero leaks, meaning all the water stays in the pipe until it gets to where it needs to go.

Source: PPI Article "Underground is Top of Mind, Charleston Region in West Virginia proving how annual reviews are vital to maintaining infrastructure"

*Please do not hesitate to contact the Alliance with any questions or comments.
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