

OCTOBER 2005  
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# Trenchless TECHNOLOGY™

Rehabilitation  
**2005**  
PROJECTS OF THE YEAR  
**Runner Up**

*Madison, Ind.*

## Trenchless Technologies Successful in Indiana's Largest Sewer Rehab Project



RUNNER UP

## Madison, Ind., Large-Scale Sewer Rehab

While large-scale trenchless rehabilitation projects may take place more commonly in large urban areas, they haven't cornered the market. The City of Madison, Ind., a town of 12,500 people along the banks of the Ohio River, showed that this summer and fall as it completed the largest single wastewater pipeline rehabilitation project in the state's history.

With a price tag of \$9.2 million, the project encompasses approximately 35 percent of Madison's sewer system. The project began in 1998 with flow monitoring, video inspections, smoke testing and manhole inspections. The project involved 58,000 ft of sewer pipe to be replaced and 24,000 ft to be rehabilitated. In addition, the project required more than 250 manholes to be replaced or rehabilitated.

"The key challenges were the many areas where the contractors must work within limited access and minimal easements," said Jeff Ponist, P.E., project manager for Commonwealth Engineers Inc., the consulting firm hired by the City of Madison to design and oversee the project. "One of the main objectives is to complete the project with as little disruption to the citizens' property and daily lives as possible."

Miller Pipeline Corp., the general contractor on the job, used five different methods of rehabilitation and/or replacement to accommodate the needs and objectives of the city. The project involved open-cut, a PVC fold-and-form liner known as EX, cured-in-place pipe (CIPP), pipe bursting and horizontal directional drilling.

In 2002, the City completed its Combined Sewer Overflow Long Term Control Plan (LTCP) as required by the Indiana Department of Environmental Management. This plan was a culmination of several years of system analysis and study.

The plan recommended a three-phase approach over a 10-year period that integrates the mandated Municipal Separate Storm Sewer System (MS4) program and eliminates CSO events up to a 10-year design storm event. The Phase I project addresses the significant infiltration and rain induced inflow in the upper collection system thereby increasing the carrying capacity of the existing interceptors and reducing wet weather flows at the remaining CSO points. This project allowed the City to eliminate five CSO overflow points. This project consisted of approximately:

8-18-in. Pipe Bursting: .....	50,000 ft
12-18-in. CIPP: .....	3,000 ft
8-12-in. PVC F&F: .....	34,000 ft
8-12-in. Replacement: .....	9,000 ft
New Lateral Connections: .....	750
16-in. Directional Drilling: .....	5,000 ft

The percentage of the project that utilized trenchless technologies was nearly 90 percent. This Phase I project was funded via the State Revolving Loan Fund program at a low interest rate of 3.3 percent. This low interest bond increased the average sewer bill by about \$10 per month to a total monthly bill of approximately \$20.

The engineer allowed pipe bursting as an alternate to open-cut, and allowed the use of the PVC fold-and-form instead of CIPP where the contractor believed the greatest savings could be realized. Based on submitted bid tabs, the City realized approximately a 10 percent savings on the total project by allowing trenchless methods vs. open-cut and by allowing the contractor to mix and match line segments with liner



The largest, single wastewater pipeline rehabilitation project in Indiana's history was completed this fall in the City of Madison.

products that best served the needs of the city. The vast majority of the pipelines that were originally designated for open-cut were pipe burst.

Since this project has started, the engineer and the general contractor have conducted two workshops in conjunction with the Indiana Rural Water Association and the city. More than 150 interested parties — from mayors and operators of other small cities in Indiana to other competing engineering firms — have attended to see various trenchless technologies showcased.

"This project goes to show that there are opportunities for the use of trenchless technology everywhere," said Mark Wallbom, executive vice president for Miller Pipeline. "Most people focus on cities like Cincinnati or Indianapolis, but the small and mid-sized towns have rehab needs too."

Owner .....	City of Madison, Ind.
Engineer/	
Consultant ....	Commonwealth Engineers Inc.
Contractor .....	Miller Pipeline Corp.