



Grand Award, Small Projects

Spring Creek Horizontal Drilling, Morristown, TN - Completed by LDA Engineering for the City of Morristown

LDA provided professional services to the City of Morristown to develop plans and specifications for a troubled section of sanitary sewer that needed rehabilitation. The project was unique and typical methods could not be used. Horizontal directional drilling was used to successfully replace a 15-inch gravity sewer pipe.

Two Morristown projects were recognized in the State's Engineering Excellence competition. The Spring Creek Horizontal Drilling project, a part of the sewer rehabilitation in Morristown was a Grand Award winner in the small project category. The City's stormwater program was awarded honors in the Studies, Research, and Consulting Engineering project category. The award program is overseen by the American Council of Engineering Companies of Tennessee. The organization works to improve business practices of engineering firms and to enhance public awareness and understanding of the value of engineering services.

Sewer Project

In compliance with the TDEC administrative order, the City of Morristown has undertaken rehabilitation of its entire wastewater collection system. A rehabilitation of this size requires several different methods of rehabilitation, including "pipe bursting," "cure-in-place piping" and "dig and replace." Greg Jones of LDA said "One particularly difficult segment, however, forced us outside these conventional rehabilitation methods and develop a new process for rehabilitating gravity sewer lines."

The problematic line segment included a 15-inch sewer line laid on minimal grade and placed adjacent to a creek and busy roadway. The line crossed under the footer of a warehouse with minimal clearance and continued under the warehouse to a manhole beneath the building. City engineering staff worked with LDA Engineering to explore different options to rehabilitate the system. "Pipe bursting" was not a viable option because of the close proximity of the sewer line to the building footer. Cured in place was ruled out because of the need for a repair under the existing warehouse. Rerouting the sewer line wasn't feasible because of the adjacent creek, warehouse and road. The city

explored purchasing the warehouse; however, this option was cost-prohibitive as it was valued at more than \$1 million.

With no available traditional method, LDA Engineering proposed a specialized option –horizontal directional drilling. This option allowed the sewer line to pass through the existing manhole underneath the building without causing disturbance to the foundation. LDA Engineering performed a cost analysis of the alternative and determined it was the best solution for the project. Cox said “We were able to make the repairs without disturbing the building and the option ended up being one of the lowest cost options.”

Operation and management of the City’s sewer system has been transferred to MUS, but the relationship with LDA continues. Mike Howard, MUS Water and Wastewater Manager said “rehabilitation of the sewer system constantly presents unique challenges. Our partnership with LDA allows for creative solutions for our customers”. Jody Wiggington, MUS General Manager said “Our team is proud of the work that is being accomplished. It is gratifying that professionals in the field recognize the quality of our efforts”.



Directional Bore Under Building



Bit for directional bore

Stormwater Program

The City made the decision in 2012 to initiate an aggressive Stormwater Capital Improvements Program to mitigate flooding problems in locations throughout the City. Most of the issues involved undersized or aging culverts and channels, eroding streams and drainage ways and aging or inadequate street drainage systems. The City dedicated a \$5 million bond issue to begin the program.

Such a significant capital program presented a challenge for the City so they selected Lamar Dunn & Associates, Inc. (LDA Engineering) to serve as the lead consultant program manager, and design consultant. This allowed the program to be implemented much more quickly to meet the needs of citizens.

The largest project completed so far is the major drainage area in the East Tennessee Valley Industrial District (ETVID). Over the years, erosion had created deep ravines at the east end of the industrial park to the point that erosion threatened a major sewer line. The project stabilized the area by reshaping the slopes, and constructing a riprap-lined channel and apron to convey the flow.

Tony Cox – “The ETVID drainage project was a massive undertaking which helps to protect our investment in the industrial park. ETVID is vital to industry and jobs in Morristown. We could not have gotten through this without the professional support of LDA.”



ETVID – Before



ETVID – after