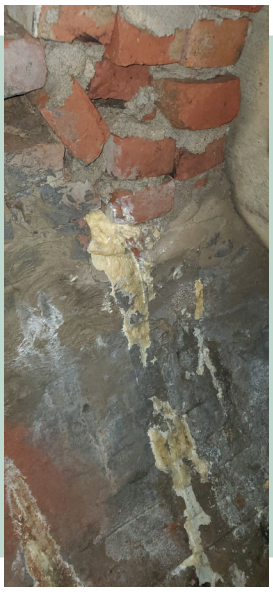
REHABILITATION OF 72-INCH BRICK COMBINED SANITARY/STORM SEWER

Project Team

- **Owner / End User:** City of Nashville – Metro Water Services
- **General Contractor:** Mill Creek Residential Trust LLC
- **Subcontractor / Applicator:** Puris/Inliner Solutions (formerly IPR)
- **Engineer:** Kimley-Horn



Project Overview

Mill Creek Residential Trust selected a LOCTITE GeoSpray geopolymer spray-applied pipe lining (SAPL) solution to rehabilitate a 72-inch diameter brick storm drain in Nashville, Tennessee. The aging pipe—located beneath the Modera-Germantown luxury residential development along the Tennessee River—required a fully structural trenchless approach that minimized construction site disruption and ensured durability for decades to come.

Collaboration between designer, Kimley-Horn Engineers and the asset owner, Metro Water Services – City of Nashville, the installation team Puris/Inliner and GeoTree as the product supplier delivered a fast, reliable, and structurally sound rehabilitation.

Scope of Work
The pipelining project included the application of nearly 700 linear feet (LF) of LOCTITE GeoSpray geopolymer spray-applied pipelining (SAPL) in a 72-inch diameter brick combined storm/sanitary sewer line underneath an active project construction zone.

Technical Approach
The subcontractor applied LOCTITE GeoSpray geopolymer, a high performance, fiber reinforced liner engineered for the structural renewal of large diameter pipes. Its advanced chemistry supports staged application without creating cold joints, making it well suited for environments where crews must move through the pipe during installation.

The hand spray process was performed from the 5 to 7 o'clock positions to maintain continuous operator access, with the pipe walls coated first and the invert completed afterward to form a uniform, monolithic liner. Prior to application, all voids and infiltration points were treated using hydraulic cement patching and plugging. The final system was installed at a minimum design thickness of two inches, designed to meet the site specific loading requirements.

Project Challenges
The project faced several significant challenges, including an aging 72-inch brick sewer showing clear structural deterioration and its critical location beneath an active multimillion-dollar residential development. The team needed a rehabilitation approach that would minimize disruption while enabling fast installation, all while addressing the complexities of a combined sewer system that required strong resistance to infiltration and variable flows.

Subcontractor Puris/Inliner (formerly IPR) completed the installation in less than two weeks using a crew of eight. The rapid installation minimized disruption to construction activities at the Modera-Germantown site and restored full structural integrity to the aging brick sewer.

Outcome
This project demonstrates how LOCTITE GeoSpray geopolymer SAPL delivers a high-strength, non-disruptive, and cost-effective solution for large-diameter sewer rehabilitation—particularly in dense urban environments and under active development sites. Through strong collaboration among the developer, engineer, owner, and contractor, the team delivered a successful renewal with lasting value for the City of Nashville.