

PROJECT OVERVIEW

The town of Cary, North Carolina, is an affluent municipality located southwest of Raleigh. The town is near the center of the Triangle region, a commuter area consisting of three major universities: Duke, UNC and NC State as well as the technology hub located in Research Triangle Park. The housing development of Preston is located adjacent to the Prestonwood Country Club, where housing values range between \$300,000 and \$1M. Bridle Creek Dr. is the main entrance to the community, and the golf course with Bridle Creek crossing through a triplet of 52"-54" CMP culverts. In 2016, a section of one of these culverts collapsed, creating a sinkhole on the side of the road. The collapse was quickly repaired with a new section of CMP, but the community was concerned that the remaining CMP sections were showing corrosion in the invert and it would be only a matter of time before a more serious collapse occurred.

SOLUTION

In May 2017 the town put out a project for bid for the pipe renewal using a centrifugally cast-in-place cementitious lining of 1" thickness. The bid was won by Inland Pipe Rehab with a low bid of \$79,725 for the lining of 175 linear ft of 52" CMP and an additional 20 linear ft of 54" CMP. Once the project was awarded, the contractor began construction in August. There were three side-by-side pipes, so the flow was diverted into a single section and each of the pipes were pressure-washed and cleaned. There was little to no infiltration due to the low bury depth of the pipes, but several missing sections of the inverts were filled. Then the GeoSpray geopolymer mortar lining was applied to each of the three pipes section over a three-day period. The 1" coating was applied to each section of pipe in a single application.

RESULTS

This was the first time the Town of Cary had chosen a GeoSpray geopolymer mortar lining solution and many of the town engineers were onsite to observe the process of application. They were impressed with how quickly and easily the pipe could be repaired. The small footprint of the equipment allowed both lanes of the busy road to remain open during the entire duration of the project, which was a major bonus to the residents. The entire project was completed, including site restoration, in under a week.

PROJECT DETAILS

Application: CMP Culvert Lining

Location: Cary, NC

Client: Town of Cary, NC

Installation: August 2017

Contractor: Inland Pipe Rehab



Starting of the GeoSpray Lining.



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CASE STUDY: Culvert Lining Cary, NC



Inlet view of the 3 CMP Culverts to be lined.



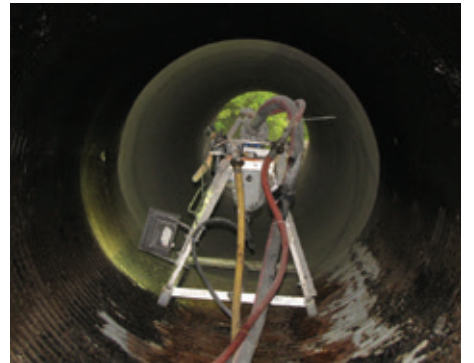
Corrosion of the CMP invert.



The casting equipment being positioned in the pipe prior to GeoSpray mortar application.



The footprint of the equipment allowed for the roadway to remain open.



Application of the GeoSpray mortar lining to the CMP Culvert.



The completed 1" GeoSpray mortar lining.



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