

72" CONCRETE SEWER PIPE REHABILITATION

USA, JANUARY 2015



Problem

The City of Kalamazoo had driven a wooden dowel into a 2" diameter hole in a concrete raw sewage force main pipe. NRI was called out to reinforce the repair and the surrounding pipe. However, initial inspection revealed an additional 1" hole adjacent to the repair. Given the extreme volume of water flowing through the pipe (1.2 million gallons/hour), the second hole could not simply be plugged with a dowel. Also, the location of the two holes, next to a flange, made the prospective repair a tight challenge.

Conditions

January in Michigan is known for freezing temperatures and it was -2°F (-18°C) when work began. First, a tent, with heaters was constructed, to create a balmy 80°F (26°C) jobsite. Then, an expert trainer from NRI University (NRI-U) arrived on site with an array of products to solve the tricky leak.

Solution

Since the pipe had to remain in service and operating at full parameters during the repair, the City decided that NRI's specialized leak repair technique would be the answer. Comprised of Syntho-Braid™ and an injectable sealant, the composite system was applied directly to the live leaks and surrounding areas. To create a smooth transition over the flange and to reinforce the rest of the existing piping, crews applied Syntho-Glass® XT composite repair system. Then, to create a final repair, they reinforced the pipe with Thermo-Wrap™.

Result

In a matter of days, with the guidance of an experienced NRI-U instructor, City crews repaired the 72" concrete pipe and a nearby 12"x 16" fiberglass reducer. The difficult repairs were quickly installed with nominal manpower and no heavy equipment. The City was extremely pleased with the outcome, and looks forward to utilizing NRI composites and NRI-U training for future projects.

"Thank you for making the repair on the critical connection to the raw sewage force main and for providing the training to the crew. Due to the change in conditions and having to stop an active leak, your 23 years of experience with multiple products was invaluable in making a successful repair. Also, thank you for the input regarding repair of the fiberglass pipe in the water treatment plant. We used the technology to repair a fiberglass pipe and expended about 10% of the cost that was anticipated from the fiberglass repair contractor. Great product and your advice and training were invaluable." — Facilities Engineer

