

Detroit, Michigan: EcoCast Rehabilitation on 7 ft. 9in.

Owner: Detroit Water and Sewerage Department



Situation

On March 3, 2016, a 12-foot wide sinkhole opened on Detroit's west side on eastbound Tireman Avenue near Greenfield Road. According to the Detroit Water and Sewerage Department (DWSD) the sinkhole was caused by the collapse of a sewer pipe that connects to an interceptor underneath Tireman Avenue. A video inspection showed a connecting pipe had fractured over the interceptor into the Greenfield sewer on the west side of the intersection of Greenfield and Tireman. The surrounding soil (wet sand) entered the 7-foot-9-inch interceptor, thus creating the sinkhole. During the project, further inspection showed that a concrete secondary liner of the interceptor was severely corroded. DWSD contracted with its emergency responder: Inland Waters Pollution Control or IWPC. IWPC is a Detroit-based industrial and environmental service firm whose 45 years of experience is built on the core belief that trenchless infrastructure solutions are critical to bringing the nation's aging water and sewer infrastructure back to standard.

Solution

IWPC recommended using IPR's EcoCast geopolymer lining system for the curved portion of the interceptor. IPR has the most comprehensive portfolio of innovative technologies currently available and is committed to continuing to develop and introduce "green" technologies. DWSD reviewed and approved IWPC's proposal and preparations for the repair work began.

In May 2016, IWPC began the installation of deep wells to lower the water table around the interceptor followed by the construction of an access shaft. Once the prep work was complete the IWPC lining crew spray-applied the geopolymer to the new ribs and lagging. To repair the straight section of the interceptor, IWPC utilized a 78-inch HOBAS pipe and installed a new 24-inch ID ductile iron sewer from the newly built drop manhole (within the access shaft) to the existing manhole in the North curb of Tireman street.

Conclusion

After the preparation, it took approximately five days to install the EcoCast solution. Repairs were completed in late October 2016. Final pavement replacement and reopening of Tireman Street occurred on November 22, 2016. Installation of the new drop manhole cured the severe flow discharge from the connection, eliminating any future H₂S issues within the sewer.

Location

Detroit, Michigan

Installation Date

November 2016

Scope

EcoCast

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Preparation of 78-inch HOBAS Pipe



Sinkhole Damage on Tireman Avenue



78-inch HOBAS Pipe



Temporary Bypass Installation



78-inch HOBAS Pipe with preparation of manhole entry point