

# CON-149, Emergency Rehabilitation of the Northwest Interceptor

Owner: Great Lakes Water Authority



## Project Overview

Inland Waters Pollution Control (IWPC), a subsidiary of Inland Pipe Rehabilitation (IPR), oversaw the design and performance of over 2,700 linear feet of the 6-foot 3-inch inner diameter Northwest Interceptor (NWI) sanitary sewer rehabilitation in Detroit, Michigan. The rehabilitation included the construction of two flow control chambers, emergency support of an actively failing tunnel, and a complete relining of over 800 linear feet. Built-in 1929, the NWI services hundreds of thousands of residents and businesses in communities such as Detroit, Redford, Livonia, Westland, and more.

## Solution

IWPC, under contract with Great Lakes Water Authority (GLWA), performed a closed-circuit television inspection of the NWI and revealed several major structural defects. Due to the high flow rate and limited access, further manned entry inspections were required. After a full examination, FK Engineering (FKE) and IWPC confirmed with GLWA that immediate rehabilitation was needed. IWPC recommended using IPR's EcoCast geopolymer lining system for the job. Compared to alternative trenchless rehabilitation solutions, IPR's EcoCast process uses a fully contained unit with portable and collapsible equipment that allows easy access to hard to reach locations of the interceptor. The equipment makes manhole access and easement work feasible without significant effort or disruption. IWPC, in association with FKE, developed and led construction and design teams to begin the rehabilitation process. Before the EcoCast installation, prep work was required, which included a multiple flow chamber bypass system, emergency tunnel support, cement and steel installations, spot repairs, debris removal, and manhole structure raises.

## Conclusion

Upon the completion of the steel and cement grout installation, IWPC installed 132 ribs within the tunnel and avoided the collapse of the interceptor. After completion of a successful bypass system, IWPC began the EcoCast installation of over 800 linear feet. IWPC successfully restored the roundness and sealed infiltrations throughout the relining. IWPC and their team demonstrated their rehabilitation expertise in successfully performing precise investigations, mandating careful design plans, collaborating with subcontractors and engineers, and quality in the work show. Through IWPC's efforts, the NWI was prevented from collapse and has renewed a design life of 50 years.

## Location

Detroit, Michigan

## Installation Date

November 2019

## Scope

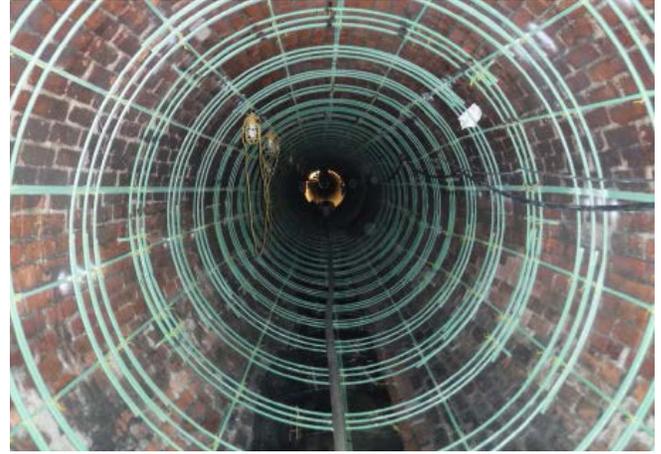
EcoCast 2,700 linear feet  
x 6'3" inner diameter

# CON-149, Emergency Rehabilitation of the Northwest Interceptor

Owner: Great Lakes Water Authority



FKE & IWPC at construction site



Epoxy coated rebar prior to rehabilitation



Rehabilitated pipe after EcoCast installation



Flow control structure



Manned walkthrough inspection of the deteriorated interceptor