

# Mud Island – Interceptor Rehabilitation Project

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## Overview

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The scope of work for this project consisted of installing a cured-in-place pipe (CIPP) in approximately 2,400 linear feet (LF) of a 60-inch diameter sewer main along the northern portion of the Mud Island Interceptor, located in Memphis, Tennessee.

The 60-inch diameter monolithic, reinforced-concrete pipe, built in 1977, serves as a critical trunk line for the city's sanitary sewer network. Due to the short lengths and diameter of the piping to be rehabilitated, the CIPP was installed using an over-the-hole wet-out process and a water inversion/water cure installation.

The project consisted of three installations and ranged in length from 644 LF to 1,048 LF. To handle the 47.5 million gallons per day (MGD) of flow, the complex bypass pumping system for this project consisted of six diesel-driven critically-silenced CD400M pumps and four diesel-driven critically-silenced DPC300 pumps. The CD400M pumps utilised five 18-inch diameter high-density polyethylene (HDPE) suction pipes that discharged into a 48-inch diameter manifold. The manifold then discharged into three 24-inch diameter HDPE pipes that ran approximately 3,500 LF along a greenway and discharged into the Wolf River siphon.

A unique aspect of the bypass system was that the five 18-inch suction pipes were actually suspended within the 30-foot deep, 60-inch diameter drop structure by cutting 40° chamfers on the ends so they could support their own weight. This eliminated the need for a costly upstream tap and saved the owner approximately \$100,000. The CIPP installation of the 2,400 linear feet of 60-inch diameter CIPP took four weeks to install and was completed on time and with zero safety incidents.

## **PIPELINE DETAILS AND PROJECT SUMMARY:**

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**Project:** Front Street & Mud Island Interceptor Rehabilitation

**Location:** Memphis, Tennessee

**Project Dates:** April 2016 to January 2018

**Pipe Length:** 2,400 LF

**Pipe Diameter:** 60-inch

**Existing Pipe Material:** Reinforced concrete pipe

**Type of CIPP used for Rehabilitation:** Standard Polyester CIPP

**Installation Method:** Water Inversion / Water Cure

**Number of Installations/Pulls:** 3

**Longest Pull:** 1048 LF

**Pressure Rating:** Gravity

**Owner:** City of Memphis, Tennessee

**Engineer:** Black & Veatch