VORTEX

CASE STUDY

PROJECT SNAPSHOT

OWNER
South Adams County Water District, Commerce City, CO

EFFECTED STRUCTURE/ DIMENSIONS
- 163 Manholes
  - Diameter: 48" & 60"
  - Depth: Varied from 3'-18'
- Material: Pre-cast
- Type: Sanitary Sewer

PROJECT CHALLENGES
- Deteriorated sanitary sewer system causing problematic inflow and infiltration
- Colorado winter / freezing temperatures during installation

SOLUTION
- Pipe Sections: CIPP lined Total LF: 40,000+
- Manholes:
  - Structural Relining with Quadex® QM-1s Restore®
  - Corrosion Resistant Lining with Quadex Structure Guard®
- Application: Spray and Trowel

CONTACT
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Pipe and Manholes Fully Restored with Materials Designed to Withstand Harsh Winters and Extremely Cold Conditions

FAILED T-LOCK LINED MANHOLES REHABILITATED WITH STRUCTURE GUARD® 100% SOLIDS EPOXY

VORTEX PRODUCTS & EQUIPMENT USED

1. Structure Guard®
2. QM-1s Restore®

THE CHALLENGE

Extreme and harsh winter weather conditions are a part of life in South Adams County, Colorado. So it is no surprise its sanitary sewer pipes and manholes were found to be suffering from severe deterioration and I & I. Rather than dig and replace, both the pipe and manholes could be fully restored and protected through trenchless rehabilitation means.

In all, there was approximately 40,000 LF of 8" pipe and 163 manholes, ranging from 48" and 60" in diameter and 3' - 8' in depth, in need of rehabilitation. If the pipe repairs were not made, the inflow and infiltration would continue to degrade the system and ultimately increase the cost of wastewater treatment. Additionally, if the manholes were not structurally restored, the threat of collapse, sinkholes and costly emergency repairs was imminent.

Cold winter conditions not only impacts the installation crew, it takes its toll on the manholes as well.

CASE STUDY

THE SOLUTION

The CIPP lining was conducted by Insituform, while the spray-applied Quadex materials used for the manholes were installed by Vortex Services. Both companies are backed by years of installation expertise.

THE PROCESS

Hunter was able to complete the job in less than two weeks. The City would shut down the system for four hours each day to allow Hunter to perform their work. This was during low flow time frames to minimize impact on the nearby citizens. However, by rehabilitating the manholes with Structure Guard®, the City saved thousands of dollars, not to mention time and inconvenience to locals if the manholes had to be dug up and replaced.

THE RESULTS

During the installation phase, cold weather became a major installation impediment. Although the frigid Colorado temperatures presented many challenges, through careful planning and execution, the crews were able to successfully complete this manhole rehabilitation project.

Post installation testing of the Structure Guard epoxy revealed adhesion levels that exceeded the expectations of county officials. Visual inspections also showed clean, smooth finished manholes in spite of the less than desirable weather conditions faced by the crew.

Typical manhole condition prior to lining with QM-1s Restore.

Manhole lined with QM-1s Restore and ready for Structure Guard epoxy coating for corrosion protection.

Structure Guard 100% solids epoxy was applied at 125 mils, to provide corrosion protection.

GREENBOOK APPROVAL

Greenbook/City of Los Angeles Department of Public Works Approves Structure Guard®

City of Los Angeles Approved Products
Select Lining and Coating