

CASE STUDY

BREVARD COUNTY, FL — SOUTH BEACHES SEWER AND MANHOLE LINING INSTALLATION

County searching for manhole repair solution to stop infiltration, restore structural integrity.

THE CHALLENGE

Located on the Atlantic Coast of Central Florida, Brevard County is home to NASA's Kennedy Space Center. By 2023, the area's aging infrastructure, particularly its manholes, were in a state of severe degradation. Without intervention, the county was at an increased risk of experiencing blocked sewers and manhole structure failures that could lead to road depressions, sewer overflows, and other damage to private property.

Having already successfully completed 18 work orders for Brevard County, the Florida Vortex Services team had built a level of trust and reliability with the county due to its history of success restoring manholes in the area. Not only did the recommended project approach and materials meet the project requirements, Vortex Services was ultimately selected due to its prior experience, projected completion time and competitive installation costs.



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PROJECT SNAPSHOT

PROJECT OWNER

Brevard County

CONTRACTOR

Vortex Services – Florida Division

PROBLEM

186 aging and deteriorating manholes suffering from partial blockage and I&I.

SOLUTION

Total manhole rehab including cleaning, grouting and lining for optimum protection and structural restoration.

CONTACT

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VORTEX PRODUCTS USED



- GeoKrete®
- I & I Guard-SCF 200
- I & I Guard-PRF
- Chimney Guard™
- Structure Guard®

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THE SOLUTION

To ensure a long-term rehab solution required to restore the structural integrity of the 186 affected manholes (total of 1500 VF) manhole preparation is key. The Vortex Services crew first used high-pressure water, sand blasting, and other mechanical methods to clean the manholes and remove any materials that hindered their functionality. I & I Guard®-SCF 200 polyurethane injection grout was then used to seal off large cracks and voids, while I & I Guard®-PRF polyurethane grout was injected to stop high-flow infiltration.

Finally ready for lining, the team then spray-applied the manholes with Quadex® GeoKrete® geopolymer. In addition to restoring structural integrity, GeoKrete is extremely corrosion resistant, even during high exposure to hydrogen sulfide.

To address I&I in the manhole chimney sections, the team installed Chimney Guard™ Epoxy Urethane Hybrid, a flexible and durable chimney seal. In manholes where the corrosive environment was more aggressive, a topcoat of Structure Guard® 100% solids epoxy, which is known for its extreme corrosion resistance, was applied.

During the installation process, the crew faced several unique challenges. Along with battling active infiltration and managing high-volume traffic around worksites, they had to prepare internal manhole surfaces for installation in some very wet areas. The team also had to navigate hard-to-access easements and fenced backyards.



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IMPACT

1

Successfully cleaned and rehabilitated 186 manholes via grouting and lining methods.

2

Completed this project within Brevard County's timeframe and budget despite managing active infiltration and high-volume traffic at multiple worksites.

3

Encouraged Brevard County to use Quadex® GeoKrete® geopolymer in the future to help protect the structural integrity of new manholes.

THE RESULTS

Brevard County Utilities is pleased with Vortex Services' manhole rehabilitation efforts. The team's chosen manhole rehabilitation methods and materials have been effective at blocking off infiltration and corrosion in the manholes, and the project, which was completed at the end of September 2023, stayed within the county's timeframe and budget. Plus, the crew inspired Brevard County to utilize Quadex GeoKrete geopolymer in the future to help protect the structural integrity of new manholes.