

CASE STUDY

MANHOLE REHABILITATION AND MAINTENANCE IN COLUMBIA, SC

City looking for manhole rehabilitation and restoration services.

THE CHALLENGE

In 2014, the City of Columbia, South Carolina entered a consent decree with the U.S. Department of Justice, Environmental Protection Agency, and the South Carolina Department of Health and Environmental Control to resolve its violations of the Clean Water Act. As part of this consent decree, the city is required to upgrade and rehabilitate its aging sewer system, and manhole rehabilitation continues to play a large part in these upgrades. Columbia selected Vortex Services for a 2019-2020 fiscal year contract to rehabilitate its manholes.



VORTEX
services



PROJECT SNAPSHOT

PROJECT OWNER

City of Columbia

CONTRACTOR

Vortex Services – Southeast Division

PROBLEM

Under consent decree, Columbia was required to rehabilitate and restore its sewer infrastructure, including its manholes.

SOLUTION

The Vortex Services team performed condition assessments on the manholes and sealed them by spray-applying Quadex® GeoKrete® geopolymer.

CONTACT

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VORTEX PRODUCTS USED



• GeoKrete®

CASE STUDY

THE SOLUTION

The Vortex Services team was tasked with rehabilitating 407 of Columbia's manholes (about 3,100 vertical feet), each 4' to 6' in diameter. From the project's very beginning in July 2021, the crew faced several challenges, such as tough terrain and hard to reach easements. They also had to operate in low noise zones and perform night work, but the benefits of this essential maintenance far outweighed these difficulties. In addition, the planned rehabilitation and upgrades would ensure that the city would not face devastating environmental issues like road collapses or sewer leaks.

To start out, the crew performed Level 2 manhole assessments on 1,700 vertical feet of the structures to identify any necessary corrective actions. Through these inspections, the team identified 132 manhole covers or frames in need of maintenance as well as 400 manholes that required sealing. The squad spray-applied Quadex® GeoKrete® geopolymer to rehabilitate these manholes. GeoKrete geopolymer restores assets' structural integrity and protects them from corrosion. 136 vertical feet of the assets also required thorough sand blasting to remove failing epoxy coating before sealing with GeoKrete.



IMPACT

1

Ensured that Columbia would not face devastating environmental issues like road collapses or sewer leaks due to under-performing sewer assets.

2

The city has since renewed the Vortex Services crew's rehabilitation contract twice.

3

Helped Columbia make necessary progress toward its rehabilitation goals as required in the consent decree.

THE RESULTS

Columbia has been pleased with Vortex Services' efforts thus far, so much so that the city has renewed the crew's contract twice. The third section of this project will continue through June 2025. Since this work was completed, all the rehabilitated manholes have been vac-tested, and all passed muster.