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CASE STUDY

Reedy River Basin Sewer Tunnel | Greenville, SC

South Carolina Community's 'Big Dig' Includes BILCO's Access Doors

As one of the fastest-growing communities in South Carolina, city officials in Greenville realized more than a decade ago that it would need major improvements to its wastewater infrastructure.

In the spring of 2022, Renewable Water Resources (ReWa) completed construction of a \$46 million project that will serve the community's wastewater conveyance needs for the next century. Work on the 1.3-mile, gravity-fed sewer line commenced in 2018. Planning for the project, known as the Reedy River Basin Sewer Tunnel or Dig Greenville, began nearly 15 years ago.

"It definitely puts not just the downtown, but rather the whole city in a better position for the future," Mayor Knox White said when the project was introduced in 2016.

The underground tunnel is the largest infrastructure project in Greenville's history. ReWa, a 97-year-old organization that protects the region's waterways and wastewater infrastructure, spearheaded the project. Black & Veatch led the design and provided construction management services.

The existing sewer line in Greenville followed the Reedy River basin through the city's downtown district. Near capacity, it faced pressure from Greenville's recent and projected population growth. Without more capacity, the community would be at risk from increased overflows. That risk posed a direct threat to water quality, the environment and economic development.

The tunnel is 7 feet in diameter and virtually invisible to the public. Entry shafts at each end are the only hint of the massive pipe under the surface. The pipes are encased in granite, lined with fiberglass and grouted. The gravity fed system means no mechanical equipment is needed to convey the flow of wastewater.

A 130-ton tunnel boring machine carved out the majority of the tunnel. The Robbins Company in Canada built the boring beast, which measures 249 feet and is one of only a handful of similar pieces of equipment in the world. Super Excavators of Wisconsin started tunnel digging in March 2018 and completed their work in September 2020.

The BILCO Company manufactured 13 floor access doors of various sizes for the project. The doors allow access to vertical shafts – one is 35 feet deep, the other is 105 feet deep – in which workers will descend into the tunnel or lower equipment into the tunnel.



Floor access doors from BILCO are installed frequently in wastewater projects to allow entry to equipment. The doors are ideal for corrosive environments and are available in a wide variety of options to meet any access requirement. Options include special finishes, grating covers, safety accessories, remote operation and lock options.

"We used those types of doors fairly often on our projects, especially at pump stations," ReWa Chief Executive Officer Joel Jones said. "We find they have good durability and reliability."

Jones said the project is critical to the long-term future of Greenville, which saw its population grow by 28 percent in the most recent census. "We expect it to continue and accelerate," Jones said. "This project will help facilitate and accommodate that growth, while also protecting against sewer overflows."



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