

Sewer Tunnel Replacement Project

Phase V - West Ashley Tunnel

February 2013

Project Overview

Charleston Water System is replacing the network of deep tunnels that carry sewage to the Plum Island Wastewater Treatment Plant. The six-phase project began in 1999 and is now in the fifth phase.

The Need

The original tunnel system was built in the late 1960s to collect wastewater from shallow sewer lines and deliver it to the treatment plant. Over time, the highly corrosive nature of wastewater damaged the carrier pipe inside the tunnel and the tunnel structure itself. This deterioration left the tunnel at risk of failure, which would block flow in the tunnel and cause sanitary sewer overflows—a potentially serious threat to public health and water quality in the Charleston Harbor.

Phase V: The West Ashley Tunnel

To date, three sections of the original tunnel system have been replaced and a fourth section added. The fifth and final phase, the West Ashley Tunnel, is the final section of the original tunnel system to be replaced.

The existing West Ashley Tunnel carries wastewater from West Ashley, parts of Johns Island, and the Towns of Hollywood, Ravenel, and Meggett—currently about 10 million gallons a day—to the treatment plant.

Construction of a new tunnel will involve drilling a 1.6-mile-long, 120-foot-deep tunnel from Albemarle Road, under the Wappoo Cut, to the Plum Island Wastewater Treatment Plant off Harborview Road. The project also includes building a new pump station and piping at the treatment plant as well as sewer system improvements in several areas. Construction is expected to begin in March 2013 and will take approximately 30 months to complete.



Inside the original sewer tunnel during construction, 1971.



This photo taken by divers inspecting the tunnel shows complete collapse of the tunnel structure. This section of tunnel has been replaced.



Inadequate tunnel capacity causes sewer overflows

This overflow occurred behind a West Ashley shopping center during a heavy rain event.

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Phase V - West Ashley Tunnel

West Ashley Sewer Tunnel Project

Criticality

Inadequate capacity in the existing West Ashley Tunnel creates a bottleneck that causes sanitary sewer overflows in the West Ashley area—particularly during heavy rain events.

Existing capacity: 19 million gallons per day (mgd)

Needed capacity: 48 mgd

Construction Cost

\$50.8 million. This includes construction of a new, 8,200 linear-foot tunnel and a 60-million-gallon/day (mgd) pump station at the treatment plant.

Project Timeline

Construction is expected to begin in March 2013 and will take approximately 30 months to complete.

