

**2017 WATER AND SEWER BONDS  
Project Descriptions**

- (1) Elledge Basin Capacity Improvements

The Utilities Division has completed a Wastewater Master Plan to review the capacity needs in all three (3) drainage basins (South Fork, Elledge, and Muddy Creek) within the division's service area. The Elledge Basin includes over 539 miles of gravity sewer main. This project will fund design and construction projects to provide additional capacity in the Elledge Basin as indicated by the Wastewater Master Plan. In FY 17-18, planning and design will be funded for two sections of the Peter's Creek Outfall. In FY 18-19, construction will be funded for these two sections.
  
- (2) Muddy Creek Basin Capacity Improvements

The Utilities Division has completed a Wastewater Master Plan to review the capacity needs in all three drainage basins (South Fork, Elledge, and Muddy Creek) within the division's service area. The Muddy Creek Basin includes over 758 miles of gravity sewer main. This project will fund design and construction projects to provide additional capacity in the Muddy Creek Basin as identified by the Wastewater Master Plan. In FY 17-18, the North Mill Creek Outfall construction will be funded.
  
- (3) South Fork Basin Capacity Improvements

The Utilities Division has completed a Wastewater Master Plan to review the capacity needs in all three (3) drainage basins (South Fork, Elledge, and Muddy Creek) within the division's service area. The South Fork Basin includes over 386 miles of gravity sewer main. This project will fund design and construction projects to provide additional capacity in the South Fork Basin as indicated by the Wastewater Master Plan. Planning and construction for the North Fiddlers Creek Outfall and the South Fork #3 Outfall will begin in FY 17-18, and planning and construction for the Abbott's Creek outfall will begin in FY 18-19.

(4) Collection System Improvements

The City of Winston-Salem received an EPA Notice of Violation for sanitary sewer overflows (SSO). No action was taken by the EPA because of the SSO reductions the City has already achieved, but notice was given that the City must continue to make progress in eliminating SSOs or future enforcement actions may be taken. To accomplish this, the City has hired an engineering firm to assist in developing a preventative management, operations and maintenance program with an early emphasis on cleaning and SSO response assessment, along with providing a comprehensive system assessment program with the goal of reducing SSOs to less than 2 per 100 miles of lines. Once the early objectives are well underway, the program will focus on system defects and utilize a "Find and Fix" approach to sewer line rehabilitation as part of a multi-year program to fund inspection, evaluation, design and construction of sanitary sewer rehabilitation projects throughout the system.

(5) Neilson WTP Modernization

The Neilson water treatment plant is the largest water treatment plant in the system with a treatment capacity of 48-mgd. Two major expansions have occurred since the construction of the original 24-mgd plant in the 1960s. Despite several small miscellaneous improvement projects, significant capital investment is required to replace aging infrastructure, improve treatment to meet current and future regulatory requirements, and to ensure the continued reliability in the distribution system supplied by this critical facility. This project will evaluate and upgrade the electrical distribution system of the plant, overhaul the filters and washwater system, upgrade the residuals management to utilize an existing NPDES permit, and modify the treatment trains to optimize the efficiency of the process.