



## Conestee Force Main and Reclaimed Water Lines | City of Greenville, South Carolina

### Project Highlights

- Gravity Sanitary Sewer Replacement
- Near and In-stream Construction Work (aerial stream crossing)
- SCDHEC Permitting (wastewater, and stormwater)
- Creation of bid documents (drawings, specifications, bid schedule, and contract)
- Permanent Utility Easement and Temporary Construction

### Client

ReWa

### Description

This project involved investigation, preliminary and detailed design, bidding

support, and construction oversight for a 4 MGD pump station which intercepts gravity flow from the Laurel Creek Basin and transfers the wastewater to ReWa's Mauldin Road WRRF via a 24-inch force main.

This project also included design of a reuse water distribution line parallel to the sewage force main between the Conestee Pump Station and the Mauldin Road WRRF, as well as a reuse water distribution line to the intersection of Fairforest Way and Laurens Road at the entrance to CU-ICAR.

The reuse water distribution lines were sized as a 24" diameter from the Mauldin Road WRRF to CU-ICAR, and 18" diameter between the Conestee pump station site and the new line in Fairforest Way.

The force main tied to one of the twin 42-inch pipes outside of the fine screen

building at the Mauldin Road WWTP. The two 42-inch pipes transfer flow from the influent pump station to the fine screens. Since the Conestee Pump Station will have a course screen, the flow can bypass the Mauldin Road course screen and go directly to the fine screens. This also allows the flow to bypass the influent pump station. This force main was designed to accommodate the future flow of 6 MGD.

### Unique Aspects

The force main, along with the force, and re-use line were installed within a new 50 feet easement obtained from fourteen (14) property owners.

### Lessons Learned

The Conestee Foundation site is located on the north side of Mauldin Road west of Laurel Creek. This site required special considerations not required by the May site. The existing gravity sewer is above creek level, which required a deep sewer routed under Laurel Creek to a proposed pump station site on the Conestee Foundation property. In addition, the site will require extensive grading to accommodate the pump station.

In evaluation of costs associated with multiple sites, these additional costs were offset by overall savings due to the final site's location. Since the Conestee Foundation site is on the north side of Mauldin Road, approximately \$130,000 was

saved in force main piping cost over other sites.

### Challenges and Solutions

**Challenge:** Sizing of distribution lines is the most difficult part of re-use water facilities. Ten (10) potential customers all involved irrigation of grasses. These grasses require approximately one-inch of water per week preferable over two or three applications. This equates to 27,152 gallons per acre per week. The above ten (10) sites comprised 163 acres.

**Solution:** In reviewing the routing of the re-use water line, the most practical route was to parallel the force main on private right-of-way from the Re-Use Pump Station along Wenwood Road to Fairforest Way. The main would then be routed along Fairforest Way on private right-of-way to the tank site. This route saved approximately \$600,000 in construction costs.

### Outcome

The pump station and associated wastewater lines were constructed and are actively in use by ReWa.

