

TAZEWELL TO DIVIDES SEWER EXTENSION

TAZEWELL COUNTY PUBLIC SERVICE AUTHORITY

Cumberland Plateau Planning District

Project Background

The Tazewell to Divides project area is located along the U.S. Route 19/460 corridor between the Town of Tazewell and the Divides and includes approximately 150 residential, 10 commercial, and 5 industrial connections. Currently, the area is not served by a public sewage system. Residences and businesses in the area primarily utilize privately owned and maintained on-site septic systems. It is suspected that some of the septic systems in the area are failing and that straight piping does occur. The majority of the project area lies in the watershed of the Upper Clinch River which has been identified by the Virginia Department of Environmental Quality (DEQ) as an impaired stream. It is anticipated that, with the provision of public sewage service, moderate potential exists for residential, commercial, and industrial growth.

Proposed Facilities

The proposed facilities associated with the Tazewell to Divides Sewer Extension include approximately 27,000 linear feet of 8-inch gravity sewer, 5,900 linear feet of 4-inch force main and two sewage pumping stations. The extension will connect to the existing Town of Tazewell sewage collection system and all wastewater generated in the project area will ultimately be conveyed to and treated at the existing Tazewell Wastewater Treatment Plant (WWTP). The Tazewell WWTP has a permitted capacity of 2.00 million gallons per day (MGD) and currently treats an average of 0.84 MGD. Treated effluent from the Tazewell WWTP discharges into the Clinch River which has been identified by DEQ as an impaired stream. Based on a 50-year design period, a potential future customer base of 182 connections (anticipated 50-year growth of 10%) and a flow of 300 gallons per day (GPD) per connection, future average daily flow for the project area will be approximately 54,600 GPD or 0.05 MGD. Therefore, adequate capacity is available at the Tazewell WWTP to treat the anticipated wastewater generated in the Tazewell to Divides project area.

Project Costs

The preliminary probable project cost and annual operation and maintenance costs associated with the Tazewell to Divides Sewer Extension are \$2,767,310 and \$13,290, respectively. These costs result in an approximate present worth of \$17,678 per existing connection.

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PRELIMINARY PROBABLE PROJECT COST

Construction Cost

27,000 L.F. 8-inch Gravity Sewer @	\$54 /L.F.	\$1,458,000
5,900 L.F. 4-inch Force Main @	\$18 /L.F.	\$106,200
2 EA. Sewage Pump Station @	\$175,000 /EA.	\$350,000
165 EA. Gravity Sewer Connections @	\$1,300 /EA.	\$214,500
Total Construction Cost		\$2,128,700

Related Cost

30 % Total Construction Cost		
Total Related Cost		\$638,610

TOTAL PROJECT COST **\$2,767,310**

ANNUAL OPERATION AND MAINTENANCE (O&M) COST

Operation and Maintenance Cost

27,000 L.F. 8-inch Gravity Sewer @	\$0.10 /L.F.	\$2,700
5,900 L.F. 4-inch Force Main @	\$0.10 /L.F.	\$590
2 EA. Sewage Pump Station @	\$5,000 /EA.	\$10,000
TOTAL ANNUAL O&M COST		\$13,290

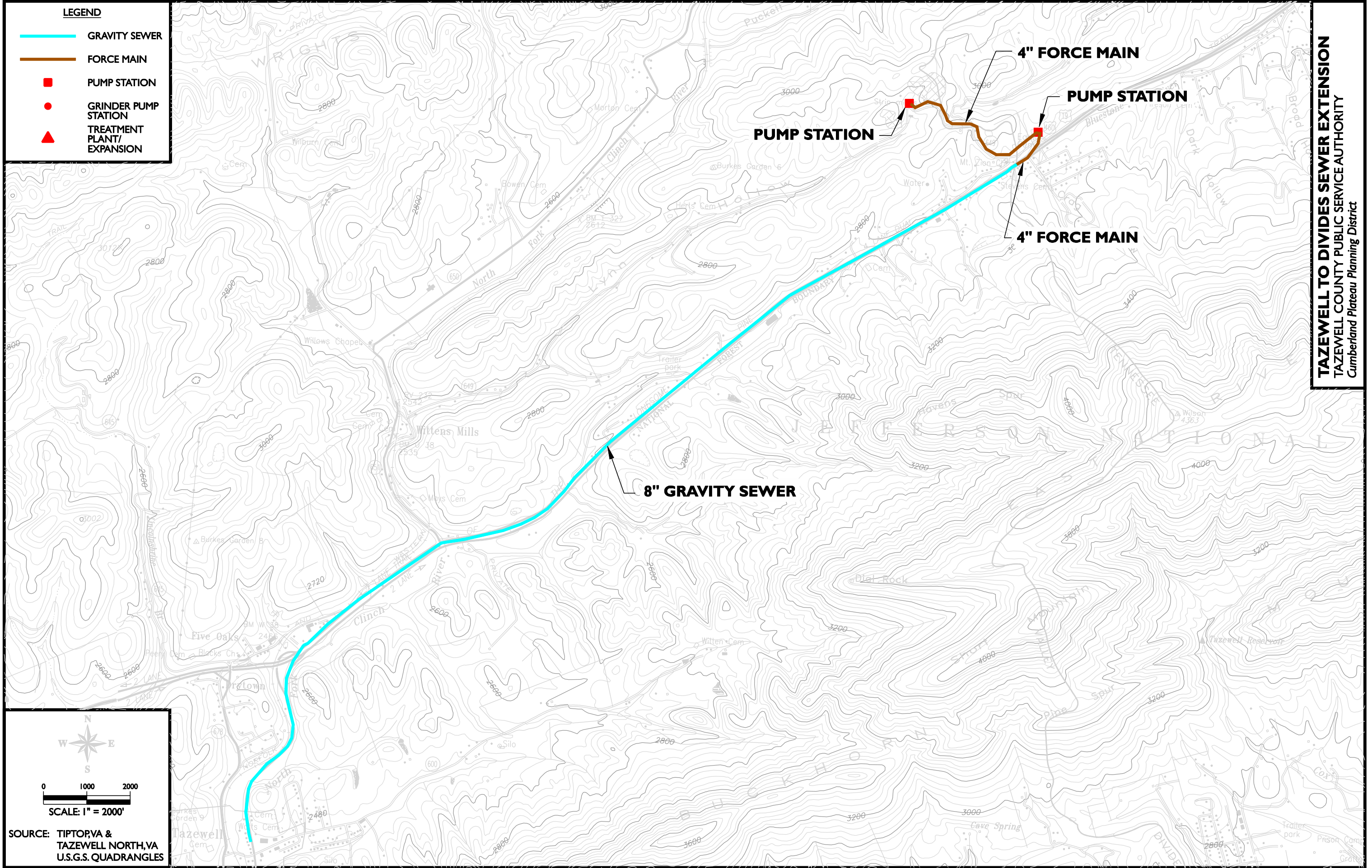
PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%) \$149,616

TOTAL PROJECT PRESENT WORTH \$2,916,926

PRESENT WORTH PER CONNECTION (165 CONNECTIONS) \$17,678

LEGEND

- GRAVITY SEWER
- FORCE MAIN
- PUMP STATION
- GRINDER PUMP STATION
- ▲ TREATMENT PLANT/ EXPANSION



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SCALE: 1" = 2000'
 SOURCE: TIPTORVA & TAZEWELL NORTH, VA
 U.S.G.S. QUADRANGLES