

TAZEWELL TO CLAYPOOL HILL SEWER EXTENSION ALTERNATIVE I

TAZEWELL COUNTY PUBLIC SERVICE AUTHORITY

Cumberland Plateau Planning District

Project Background

The Tazewell to Claypool Hill project area is located along the U.S. Route 19/460 corridor from Claypool Hill to the Town of Tazewell including the Pounding Mill Branch area along State Route 637 and includes approximately 444 residential, 10 commercial, and 10 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 growth, and high potential exists for both commercial and industrial growth.

Proposed Facilities

The proposed facilities associated with the Tazewell to Claypool Hill Sewer Extension Alternative I include approximately 72,300 linear feet of 10-inch gravity sewer, 96,400 linear feet of 8-inch gravity sewer, and 4 railroad crossings. The extension will connect to the existing Town of Richlands sewage collection system and all wastewater generated in the project area will ultimately be conveyed to and treated at the existing Richlands Wastewater Treatment Plant (WWTP). The Richlands WWTP has a permitted capacity of 4.00 million gallons per day (MGD) and currently treats an average of 2.25 MGD. Treated effluent from the Richlands 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 510 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 153,000 GPD or 0.15 MGD. Therefore, adequate capacity is available at the Richlands WWTP to treat the anticipated wastewater generated in the Tazewell to Claypool Hill project area.

Project Costs

The preliminary probable project cost and annual operation and maintenance costs associated with the Tazewell to Claypool Hill Sewer Extension Alternative I are \$13,670,800 and \$16,870, respectively. These costs result in an approximate present worth of \$29,872 per existing connection.

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PRELIMINARY PROBABLE PROJECT COST

Construction Cost

| | | | |
|-------------------------|-----------------------------|---------------|--------------|
| 72,300 L.F. | 10-inch Gravity Sewer @ | \$64 /L.F. | \$4,627,200 |
| 96,400 L.F. | 8-inch Gravity Sewer @ | \$54 /L.F. | \$5,205,600 |
| 464 EA. | Gravity Sewer Connections @ | \$1,300 /EA. | \$603,200 |
| 4 EA. | Railroad Crossings @ | \$20,000 /EA. | \$80,000 |
| Total Construction Cost | | | \$10,516,000 |

Related Cost

| | | | |
|--------------------|-------------------------|--|-------------|
| 30 % | Total Construction Cost | | |
| Total Related Cost | | | \$3,154,800 |

TOTAL PROJECT COST \$13,670,800

ANNUAL OPERATION AND MAINTENANCE (O&M) COST

Operation and Maintenance Cost

| | | | |
|-----------------------|-------------------------|--------------|----------|
| 72,300 L.F. | 10-inch Gravity Sewer @ | \$0.10 /L.F. | \$7,230 |
| 96,400 L.F. | 8-inch Gravity Sewer @ | \$0.10 /L.F. | \$9,640 |
| TOTAL ANNUAL O&M COST | | | \$16,870 |

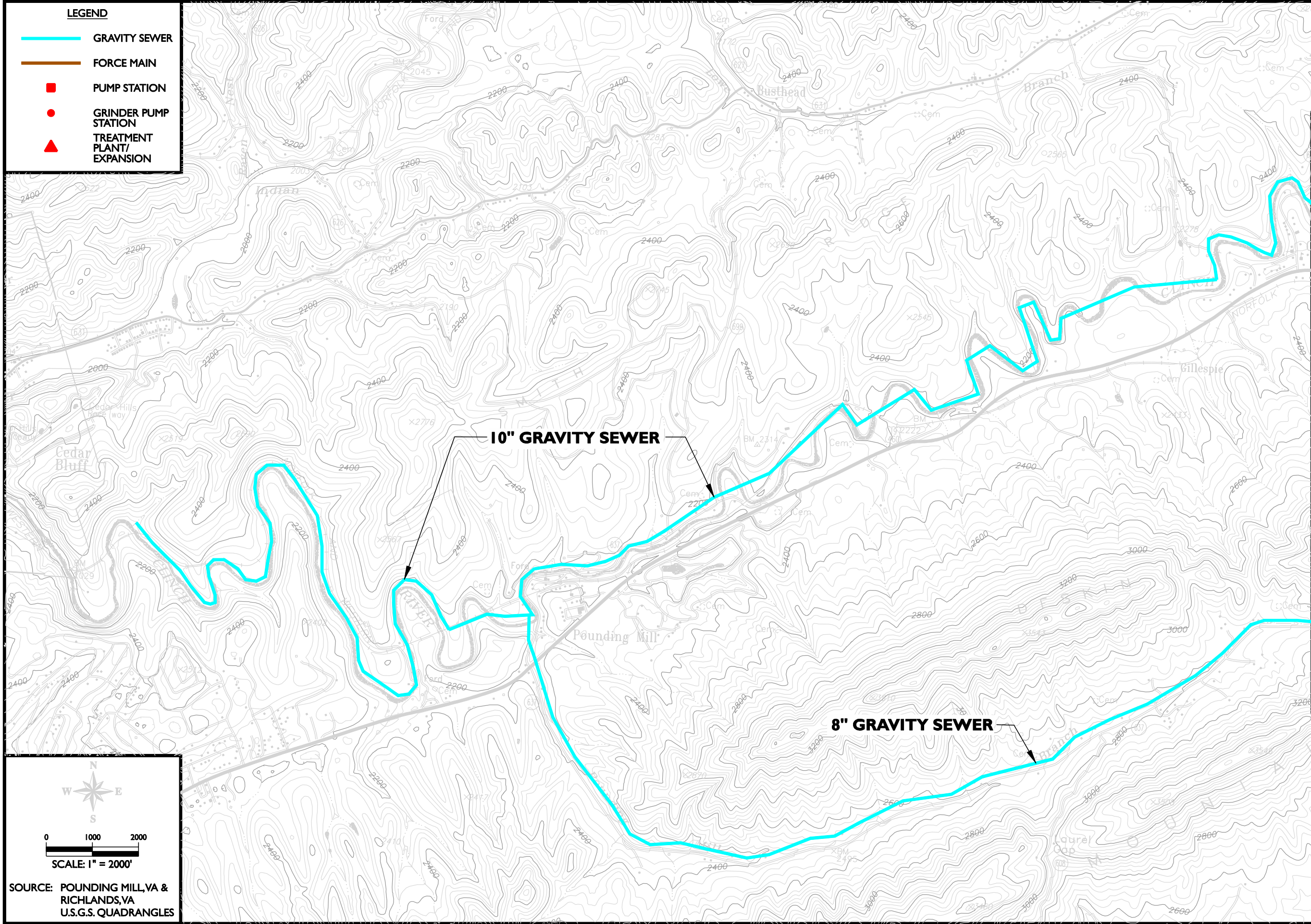
PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%) \$189,919

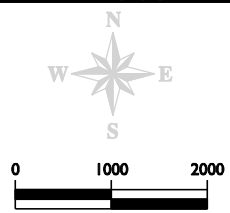
TOTAL PROJECT PRESENT WORTH \$13,860,719

PRESENT WORTH PER CONNECTION (464 CONNECTIONS) \$29,872

LEGEND

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





 SCALE: 1" = 2000'

SOURCE: POUNDING MILL, VA & RICHLANDS, VA
U.S.G.S. QUADRANGLES

MATCH LINE SHEET 2

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