

SUGAR GROVE DECENTRALIZED SEWER PROJECT

RYE VALLEY WATER AUTHORITY

MOUNT ROGERS Planning District

Project Background

There is a concentration of houses and mobile home parks along Flat Ridge Road with straight pipe discharges. This situation is acute in summer months when the stream is dry. Sewer service is also needed along Slemo Creek to the northeast. “The Friends of the South Fork of the Holston River” are trying to improve conditions in these headwaters of the river.

Proposed Facilities

The areas to the east and west of Route 16 could be combined into one decentralized system (125 homes) with the treatment facilities located near the fire department. Drip disposal is proposed for disposing of the treated effluent with the probable site being on the hill behind the fire hall. The unsewered area on Slemo Creek has 25 homes and would have a separate treatment and disposal system. Each home would have its own septic tank and the pretreated effluent from the tanks would be collected in small diameter lines and sent to the treatment facility. The AdvanTex AX100 treatment module would be the preferred method of treatment and disposal would be into the soil where possible.

Project Costs

The preliminary probable project cost and annual operation and maintenance costs associated with the Sugar Grove Decentralized Sewer Project are \$1,973,020 and \$36,720, respectively. These costs result in an approximate present worth of \$14,038 per equivalent connection.

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PRELIMINARY PROBABLE PROJECT COST

Construction Cost

16,000 L.F.	3-inch Sewer Line	\$10 /L.F.	\$160,000
7,200 L.F.	4-inch Sewer Line	\$14 /L.F.	\$100,800
4 EA.	Road Crossing	\$1,500 /EA.	\$6,000
2 EA.	Stream Crossing	\$1,500 /EA.	\$3,000
45 EA.	STEG System	\$2,000 /EA.	\$90,000
125 EA.	STEP System	\$3,500 /EA.	\$437,500
34,000 GAL.	Treatment System	\$10 /GAL.	\$340,000
34,000 GAL.	Disposal System	\$8 /GAL.	\$272,000

Total Construction Cost \$1,409,300

Related Cost

40 % Related Cost \$563,720

TOTAL PROJECT COST \$1,973,020

OPERATION AND MAINTENANCE (O&M) COST

<u>CONN.</u>	<u>UNIT</u>	<u>DESCRIPTION</u>	<u>MONTHLY</u>	<u>ANNUALLY</u>
170 EA.		Routine Maint. & Monitoring	\$10.00	\$20,400
170 EA.		Pump Septic Tanks	\$2.50	\$5,100
170 EA.		Power & Telephone	\$3.50	\$7,140
170 EA.		Sampling	\$0.50	\$1,020
170 EA.		Breakdown Maintenance	\$1.50	\$3,060
		TOTAL O&M COST	\$18.00	\$36,720

PRESENT WORTH OF ANNUAL O&M COST (30 YEARS, 8%) \$413,386

TOTAL PROJECT PRESENT WORTH \$2,386,406

PRESENT WORTH PER CONNECTION (170 CONNECTIONS) \$14,038

