

Harrogate Sewer-

Construction costs on a mechanical public owned wastewater treatment works are going to be in the neighborhood of \$5.50 to \$6.00 per gallon of capacity.

Unit Costs of treating 1,000 gallons of Wastewater (O & M)		
A.	< 10,000 gallons per day	\$5.07
B.	10,000 to 1 million gallons per day (mgd)	\$2.29
C.	1 mgd to 10 mgd	\$1.19
D.	> 10 mgd	\$1.06

Harrogate has a 2004 certified population of 4,425. The University of Tennessee has projected a population of 4,916 for Harrogate in 2020. A 20 year planning projection for the wastewater treatment works would take us out to the year 2025, and the population would project to approximately 5,000.

Using Tennessee's *Design Criteria for Sewage Works*, sewage discharge from residences is calculated at 100 gallons per day (gpd).

$5000 \text{ residents} \times 100 \text{ gpd/resident} = 500,000 \text{ gallons per day}$

Therefore, a plant that considers only Harrogate's residential needs would need to be designed for a minimum 500,000 gpd treatment capacity.

Using the construction cost figures above, the plant could range in cost from \$2,750,000 to \$3,000,000.

Operation and maintenance costs would be calculated using row "B" from the table above.

"B." 10,000 to 1 mgd: \$2.29 cost/1000 gals of wastewater.

$500,000 \text{ gpd} \times \$2.29/1,000 \text{ gal} = \$1,145 \text{ per day operations and maintenance.}$

$\$1,145/\text{day} \times 365 \text{ days/year} = \$417,925/\text{year annual cost of operations and maintenance.}$