

Fort Collins Septage Rate Draft Executive Summary

Introduction

The City engaged J-U-B ENGINEERS, Inc. to assist in the evaluation, design, procurement support, construction support, and business plan of a new septage receiving station. J-U-B retained Raftelis to develop a rate to recover the cost to provide service to septic haulers.

Septage Rate Cost of Service

The method for determining septic extra strength surcharges is based on the principle of cost causation. The costs to treat and administer and extra strength charges are assigned to customer classes based on their proportionate contribution to flow and strength. There are several steps required to develop this proportional relationship. Raftelis followed the principles outlined in the Water Environment Federation's Manual of Practice 27 (MOP27), *Financing and Charges for Wastewater Systems*, as well as our experience with other clients throughout the US in developing this model.

Expenses

The first step of the rate development is to come up with the expenses associated with the septage receiving service provided by the City. The City of Fort Collins provided labor and operations and maintenance (O&M) costs specific to the septic receiving station. Capital costs were provided by J-U-B ENGINEERS for the site and treatment costs were calculated based on the City's Code. These costs are outlined in the following sections.

Capital

Capital costs for a new septage receiving station were estimated at \$2.05 million. These costs were assumed to be included in a bond with the terms shown in **Table 1**, resulting in an annual debt payment of \$157,752.

Table 1: Assumed Debt Terms

Terms	
Month Issue	January
Interest Rate	4.5%
Years	20
Issuance Cost	2.0%

Labor

The septage receiving facility involves three labor categories: maintenance, operations, and a senior specialist in sciences. Because the off-site location is the preferred alternative, the maintenance and operations positions were estimated to be equal to one full-time equivalent (FTE) employee to account for extra travel time. Position salary ranges were provided and averaged to come up with the yearly costs in **Table 2**.

Table 2: Labor Expenses

Position	Yearly Cost
Maintenance (1 FTE)	\$67,836
Operator (1 FTE)	\$72,294
Sr. Specialist, Sciences (0.5 FTE)	\$48,937
Total Labor	\$189,066

Treatment

To equitably account for treatment costs, the surcharge rate from *Sec. 26-282* of Fort Collins' code was referenced. This section defines strengths and surcharge costs for industrial customers. The formula from the code is $C_s = V_u[B_c(B) + S_c(S)]$ where:

- C_s is the user's surcharge for wastewaters of excessive strength,
- V_u is the volume of wastewater discharged,
- B_c is the cost of service for treatment of a unit of biological oxygen demand (BOD) ,
- B is the concentration of BOD from a user in excess of two hundred sixty-five (265) mg/1,
- S_c is the cost of service for treatment of a unit of total suspended solids (TSS), and
- S is the concentration of TSS from a user in excess of two hundred thirty-five (235) mg/1.

The variables were assigned as shown in **Table 3**. Average BOD and TSS strength concentrations (stated in milligrams per liter mg/1) for septic wastewater were assigned from the USEPA's Guide to Septage Treatment and Disposal. The total average strength was used instead of strengths "in excess of" the values provided in the code since industrial customers pay a base rate to cover these costs, and septic customers should pay the full cost of treatment.

There are two scenarios used to estimate volumes. The first scenario is a volume of approximately 3.4 million gallons of septic disposal (average of 2021 and 2022 actuals) if the Greely plant returns online, the second scenario assumes the Greely plant will remain offline and that those customers will be diverted to the Ft. Collins plant. The Greely offline scenario is approximately 4.6 million gallons of septage (average of 2023 and 2024 data through June). If the Greely plant is online, the treatment costs are \$269,335 due to less septic being treated, and if it remains offline, the treatment costs are estimated to be \$375,231, as shown in **Table 3**.

Table 3: Treatment Cost Variables ($C_s = V_u[B_c(B) + S_c(S)]$)

Treatment Formula Variables	Greely Online	Greely Offline
V_u (gal)=	3,445,368	4,800,000
B_c =	\$0.004025	\$0.004025
B (mg/L) =	6,480	6,480
S_c =	\$0.004050	\$0.004050
S (mg/L) =	12,862	12,862
C_s=	\$269,335	\$375,231

Other Operations & Maintenance

The staff provided other operations and maintenance costs, including water, electricity, and maintenance parts. Water and electricity specific to septic receiving were estimated to be three percent of the total water and electric costs. **Table 4** shows the total of \$29,350 for other O&M.

Table 4: Other O&M Expenses

Other O&M	Cost
Water (3% of total)	\$1,350
Electric (3% of total)	\$23,000
Parts	\$5,000
Total Other O&M	\$29,350

Total Revenue Requirement

The expenses are added together to create a total revenue requirement, as shown in **Table 5**.

Table 5: Revenue Requirement

	Greely Online	Greely Offline
Total Capital (Debt Payment)	\$157,596	\$157,596
Total Labor	\$189,066	\$189,066
Total Treatment	\$269,335	\$375,231
Total Other O&M	\$29,350	\$29,350
Total Revenue Requirement	\$645,347	\$751,243

Proposed Septage Rate

The proposed rates are calculated by taking the revenue requirement and dividing it by the average use to arrive at a cost per gallon. The proposed rates are provided in **Table 6**.

Table 6: Proposed Septage Rate

	Greely Online	Greely Offline
Total Revenue Requirement	\$645,347	\$751,243
Average Use (gal)	3,445,368	4,800,000
\$/gal O&M (Labor & Other)	\$0.063	\$0.046
\$/gal Capital	\$0.046	\$0.033
\$/gal Treatment	\$0.078	\$0.078
Cost/gallon	\$0.187	\$0.157