

Charlotte Community Wastewater Summary

The expansion of the municipal wastewater disposal system to accommodate more than a moderate number of users has generally two cost components;

1. The cost of expanding the disposal system; and
2. The cost of the supporting collection system.

Expansion of the Disposal System:

- A. The cost for sharing the existing unallocated capacity is limited primary to the original construction costs with an adjustment for inflation. The WW report's recommended unallocated capacity to be made available to the public is 2,514 GPD.
- B. The cost expand the system from the current 4,999 GPD to 6,499 GPD is rather small as this would simply require the processing of a wastewater disposal system amendment application. This would increase the unallocated reserve non-municipal capacity to 4,014 GPD.
- C. The costs to expand the existing system to any value greater than 6,500 GPD triggers the need for a State Indirect discharge Permit. This process is fairly conservative requiring more disposal field area per applied gallon than the current Small Scale wastewater disposal system rules that governs the existing system.

This wastewater disposal site is challenged due to the limited amount of dilution due to the small size of the receiving stream. Alternate methods to demonstrate compliance with the State water quality standards will require an expansive investment in consultant services with a chance that they will not be successful.

The estimated maximum capacity of the system is 15,000 GPD yielding an unallocated reserve non-municipal capacity to 10,514 GPD.

- D. The Town also has easements for potential wastewater disposal systems located at:
 - a. The Old lantern
 - b. Lavalette Property off of Greenbush Road.

Both of these areas could be used to either expand the capacity of the Burns property wastewater disposal field or they could be used to address localized needs but would require supporting design, permitting and construction at a large per GPD cost.

Collection System: Options for collecting wastewater from private properties is either:

- A gravity based system typically using 6" to 8" diameter pipes which conveys flows from high points to the system low point.
- A low pressure collection system which utilizes individual private pump stations to move the wastewater within a common force main.
- A hybrid of the two systems outlined above.

Gravity Collection System

- A. The existing system operates by gravity through a series of service lines and a sewer main located on Ferry Road. Flows at the low point in the collection system are sent to an existing pump station which conveys the wastewater through a 2” force main to the burns property wastewater disposal field.
- B. The existing gravity collection system can be expanded in both the easterly direction on ferry road to a point just east of the Library driveway while the system can be expanded uphill to the west along ferry road to the Greenbush Road intersection and then approximately 400 feet south to the high point on Greenbush Road..

Low Pressure Collection System

- C. This type of system typically has lower first time costs for the conveyance force main as it can be adjusted to follow the contour of the land and can be readily expanded beyond the traditional limitations of a gravity collection system. The drawback of this type of system is that it requires that each property install pump station to move wastewater from the private property into the common conveyance force main. For retrofit systems where the existing property’s wastewater system flows by gravity from the house to the private disposal system, this represents an additional construction cost.

The cost of this system is highly dependent on the areal extent of the collection system.

Hybrid collection System

We envision that this type of system would utilize the existing gravity collection in its current configuration or some expanded form with a low pressure collection system which collects wastewater from more remote areas.

Expansion Costs – Outlined below are a number of scenarios to increase the available capacity and the associated costs to do so.

	Description	Total Cost	Total Capacity	Cost per Gal	Available Capacity
1	Utilize the unallocated capacity in the existing municipal wastewater disposal system	\$326,625	4,999	\$65.34	2,514
2	Expand the existing municipal system from 4,999 GPD to 6,499 GPD	\$365,375	6,499	\$56.22	4,014
3	Transfer municipal flows to new Mbund system on Old Lantern property and utilize unused capacity at existing Municipal Disposal system	\$657,626	7,999	\$82.21	5,514
4	Transfer municipal flows to new Mbund system on Old Lantern property and expand capacity at existing Municipal Disposal system	\$675,001	9,499	\$71.06	7,014
5	Develop Lavalette Disposal Field Area with low pressure collection system	\$122,625	1,800	\$68.13	1,800
6	Expand the existing municipal system from 4,999 GPD to 15,000 GPD	\$704,716	14,999	\$46.98	12,515