RAFTELIS

Draft MEMO

To: Michael Ambrose, Town Manager, Town of Landis, NC

From: Raftelis

Date: February 19th, 2025

Re: Sewer Wholesale Charge Analysis

Message:

The Town of Landis (Town) receives sewer treatment from the City of Salisbury (City) per an agreement between the Town and the City dated July 20, 1983, which was subsequently amended by the First and Second Amendments dated March 12, 1986, and March 16, 1991, respectively. Per the contract and amendments, the Town pays the City based on the City's inside-city rate (currently $6.07 per hcf) multiplied by the total volume of sewer discharged by the Town into the Grants Creek Interceptor. Because the Town connects to the City's sewer system at Grants Creek and does not utilize the City's collection system, the Town engaged Raftelis to calculate an estimated wholesale rate for sewer service provided to the Town. This memo summarizes three approaches used to estimate a wholesale sewer rate that the Town can then use in its discussions with the City.

Comparison of City's retail customer versus Town cost per hcf

One data point to gauge the rate paid by the Town, is to compare the average retail cost per hcf of sewer service paid the City's retail customer to the cost paid by the Town for sewer service. Raftelis calculated the

City's typical bill for a retail customer, assuming 10 HCF of usage/month[1] and a meter connection size of ¾". This results in a typical monthly retail bill of $65.41, as shown below. The implied overall cost to the City's retail customers, when considering both base and volumetric rate components, is $6.54/HCF. This rate in theory reflects total sewer utility costs, including for example administrative, collection costs, etc. for a typical sewer retail customer. In contrast, the Town's cost per hcf is $6.07. The indicates the Town is paying 7% less than the rate paid by the City's retail customers.

Table 1: City of Salisbury Typical Retail Bill

	Rate	Usage (HCF)	Average Retail Total Bill
¾" Meter Fixed Charge	$4.65	n/a	$4.65
Volumetric charge per HCF	$6.07	10	$60.70
Total			$65.35
			HCF Cost Comparison
Implied cost per hcf for City's retail customer (Total bill divided by total usage)			*$6.54*
Town rate paid per hcf of sewer service			*$6.07*
Difference between retail cost per hcf and Town cost per hcf			**7%**

Benchmark of Wholesale Sewer Rates

Raftelis gathered existing wholesale and retail rates for several nearby utilities and calculated a similar analysis as that described above. Raftelis calculated the implied overall cost to retail customers per hcf, when considering both base and volumetric rate components, compared to wholesale customers. The rates shown in Table 2 are current as of the date of this memo. As shown, the difference between the retail and wholesale customer costs per hcf ranges between 7% to 43%. It should be noted that the Cape Fear Public Utility Authority assesses wholesale customers a large monthly fixed charge per million gallons of capacity which was unable to be factored into the calculation. Therefore, it is shown as a data point, as is the information for the Water and Sewer Authority of Cabarrus County which is only a wholesale rate provider. As shown, the Town is paying 7% less than the City's retail customers, whereas the wholesale customers serviced by the peer group experience larger differences compared to their respective retail customers.

[1] 10 HCF approximates the average of residential and commercial usage for the City, based on the assumption that the average residential customer uses 6.6 hcf per month and commercial customers use on average 13 hcf per month.

Table 2: Sewer Wholesale Rate Comparison[2]

Utility Name	Wholesale Sewer Rate/HCF	Retail Sewer Rate/HCF	Retail Sewer Base Charge ¾" meter	Average Retail Total Sewer Bill (10 HCF)	Implied Retail Sewer Cost per Hcf	*Difference between Retail and Wholesale Sewer Cost per HCF*
City of Salisbury	$6.07	$6.07	$4.65	$65.35	$6.54	**7%**
York County, SC	$4.81	$6.65	$8.53	$75.03	$7.50	**36%**
Winston-Salem/Forsyth County (rate for Davie County)	$4.51	$4.51	$9.42	$54.52	$5.45	**17%**
GUC	$4.40	$6.53	$12.29	$77.59	$7.76	**43%**
Cape Fear PUA[3]	*$3.13*	$4.84	$16.86	$65.26	$6.53	
WSACC (rate for Kannapolis)	$2.81	WSACC only serves wholesale customers.				

Wholesale Rate Estimate for the City of Salisbury

Using the City of Salisbury's operating budget, fixed asset information for the treatment plant, and various assumptions, Raftelis calculated an estimated sewer wholesale rate. It should be noted this analysis is for demonstration purposes and the assumptions would need to be discussed in more detail with the City for accuracy and any refinement.

The approach used to calculate the wholesale rate is the utility approach which looks at two primary cost components: 1) An O&M component which includes an allocated share of costs for O&M of the assets used to provide wholesale service, and 2) A capacity component which includes a rate of return applied to an allocated portion of assets used to serve wholesale customers and an allocated portion of the depreciation expenses associated with these assets. The capital component is a proxy for how much debt service and treatment plant replacement and rehabilitation should be shared by the Town.

O&M Cost

The costs include total operating expenses from the City's FY 2025 budget. As shown in Table 3, total operating expenses were allocated between water and sewer, and those to be shared by all customers including wholesale customers, based on categories available in the budget. Sewer Treatment costs were allocated 100% to sewer, while Water Resources, Distribution and Collection, and AMI were not allocated as these do not provide service to wholesale customers. The remaining costs (Personnel and Environmental

[2] These rates may not include any fees for industrial surcharges.and the retail rates may represent the average of residential and commercial sewer rates per hcf.

[3] For "bulk sewer"; wholesale customers pay an additional monthly charge of $45,272 /MGD/month which is NOT reflected in the wholesale rate above. Therefore the wholesale rate shown above is not inclusive of all costs paid by the wholesale customer.

Services) were allocated based on the ratio of wastewater treatment plant employees to total City of Salisbury employees. This composite allocation was calculated to equal 32%. Total estimated sewer operating costs to be shared by all customers including wholesale customers were estimated to be $8,887,519.

The total sewer operating cost was then divided by estimated sewer flows for all of the City's customers, including Landis' flows and other wholesale customers' flows. Flow data was obtained from the North Carolina DWR Local Water Supply Plan website for the most recent year available (2023). Monthly flow data in MGD was averaged to produce an estimate for a single years' consumption. City flows were estimated at 6.85 MGD, Landis flows were estimated at 0.39 MGD, and other wholesale customers' flows were estimated at 0.2 MGD. The total combined flows of 7.48 MGD were converted to HCF and used as the divisor for operating costs, resulting in an estimated operating cost of $2.44/HCF.

Table 3: O&M Wholesale Component (1)

I) O&M Cost from City's Budget

O&M	FY 2025 Budget	Allocation		
Personnel	$ 7,686,045	32%	$ 2,473,670	
Water Resources	$ 5,511,679	0%	$ -	
Distribution and Collection	$ 8,761,859	0%	$ -	
Environmental Services	$ 661,239	32%	$ 212,813	
Wastewater Treatment	$ 6,201,037	100%	$ 6,201,037	
AMI	$ 899,209	0%	$ -	
	$ 29,721,068		$ 8,887,519	**A**

O&M Cost per HCF	**$ 2.44**	**A/C**

Sewer Flows - MGD		
Salisbury Avg MGD from water supply report	6.85	
Landis Avg MGD from water supply report	0.39	
Other wholesale MGD from water supply report	0.2	
	7.48	
Sewer Flows - HCF		
Salisbury	3,341,198	
Landis	190,470	**B**
Other wholesale	117,064	
	3,648,731	**C**

(1) Assumptions regarding allocations need to be reviewed with City staff for reasonableness and potential modification.

Capital Cost

The capital cost was estimated using fixed asset records provided by the City of Salisbury and represent the wastewater treatment plant assets only. The net book value of wastewater treatment plant assets is $43,892,300, which serves the basis of the capital cost.

The capital cost is estimated by applying an assumed rate of return and a depreciation component. Rate of return was calculated by multiplying the estimated sewer net book value ($43,892,300) by the Town's share of City WWTP treatment capacity (2 MGD as stated in the original contract, or 16% of the City's total 12.5 MGD), and multiplying the resulting total by an assumed rate of return (6%). Annual depreciation was estimated to be 2% per year, based on industry trends. Total capital costs – the sum of annual rate of return and depreciation – were calculated to be $561,821 per year, resulting in a capital rate of $2.95/HCF ($561,821 / 190,470 HCF Town sewer flow). These capital costs were converted to a rate per HCF by calculating estimated annual depreciation, and estimated annual rate of return, and dividing the total of these annualized estimates by the Town's flows in HCF.

Table 4: Capital Wholesale Component (1)

II)	**Capital Cost**	FY 2024 ACFR					
	Original Cost						
	Land	$	2,278,119	50%	$	1,139,060	
	Buildings and Improvements	$	244,719,213	30%	$	73,415,764	
	CWIP	$	4,564,315	0%	$	-	
		$	251,561,647		$	74,554,823	**D**
	Total Depreciation	$	(135,380,311)	30%	$	(40,122,393)	
	Estimated Net Book Value	*$*	*116,181,336*		*$*	*34,432,431*	**E**
	Data provided by Salisbury - net book value of wastewater treatment system only				**$**	**43,892,300**	**F**
	Salisbury total treatment capacity - MGD		12.5				
	Landis capacity - contract - MGD		**2.0**				
	% of capacity for Landis		16%				**G**
	Rate of return factor		6.00%				**H**
	Rate of Return				$	421,366	**FxGxH**
	Depreciation @ 2% per year				$	140,455	**Fx2%xG**
					$	561,821	**I**
	Capital Cost per HCF				**$**	**2.95**	**I/B**

(1) Assumptions regarding allocations need to be reviewed with City staff for reasonableness and potential modification.

Combining the estimated operating rate ($2.44/HCF) and capital rate ($2.95/HCF) yields the estimated wholesale rate of $5.39/HCF. This rate is approximately 11% lower than the current rate of $6.07/HCF. However, this is based on the Town's maximum 2 MGD as stated in the original agreement between the Town and the City. The estimated wholesale rate using this approach would decrease significantly if less sewer treatment could be "reserved" by the Town. With the City and the Town both experiencing growth, it would be beneficial for the City and the Town to discuss the

impact and appropriateness of the Town's 2 MGD "reservation" and if there are options in the short-term and long-term that would benefit both parties.

Table 5: Estimated Wholesale Sewer Rate

III)	**Total O&M and capital cost per HCF**	**$**	**5.39**	**89%**
	Current sewer rate paid by Landis per HCF		***$6.07***	

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