RAFTELIS

April 27, 2026

Mr. William Vaughan, DPA, PE
Public Utilities Director
City of Statesville

Subject: Water and Wastewater System Development Fees for FY 2026 DRAFT

Dear Mr. Vaughan:

Raftelis Financial Consultants, Inc. ("Raftelis") has completed an evaluation to develop cost-justified water and wastewater system development fees for fiscal year ("FY") 2026 for consideration by the City of Statesville ("City"). This report documents the results of the analysis, which was based on an approach for establishing system development fees set forth in North Carolina General Statute 162A Article 8 – System Development Fees ("Article 8"). The purpose of this report is to summarize Raftelis' conclusion related to cost justified water and wastewater system development fees.

The preparation of this report was developed by Raftelis for the City based on a specific scope of work agreed to by both parties. The scope of Raftelis' work consisted of completing a calculation of cost justified water and wastewater system development fees using common industry practices and industry standards. We provide no opinion on the legality of the system development fees implemented by the City. It is the responsibility of the City to ensure compliance of the system development fees with North Carolina General Statute 162A Article 8 – "System Development Fees.". The scope of work did not include any additional work other than the calculation associated with the system development fees, such as opinions or recommendations on the administration of these fees, the timing and use application of revenues from the collection of these fees, etc., as that is the responsibility of the City.

In developing the conclusions contained within this report, Raftelis has relied on certain assumptions and information provided by the City, who is most knowledgeable of the water and wastewater system, its finances, etc. Raftelis has not independently verified the accuracy of the information provided by the City. We believe such sources are reliable and the information obtained to be reasonable and appropriate for the analysis undertaken and the conclusions reached. The conclusions contained in this report are as of the stated date, for a specific use and purpose, and made under specific assumptions and limiting conditions. The reader is cautioned and reminded that the conclusions presented in this report apply only as to the effective date indicated. Raftelis makes no warranty, expressed or implied, with respect to the opinions and conclusions contained in this report. Any statement in this report involving estimates or matters of opinion, whether or not specifically designated, are intended as such, and not as representation of fact.

Background

System development fees are one-time charges assessed to new water and/or wastewater customers for their use of system capacity and serve as an equitable method by which to recover up-front system capacity costs from those using the capacity. Article 8 provides for the uniform authority to implement system development fees for public water and wastewater systems in North Carolina and was passed by the North

Carolina General Assembly and signed into law on July 20, 2017, and has been modified since adoption. According to the statute, system development fees are required to be adopted in accordance with the conditions and limitations of Article 8, and the fees are required to conform to the requirements set forth in the Article. In addition, the system development fees must also be prepared by a financial professional or licensed professional engineer, qualified by experience and training or education, who, according to the Article, shall:

- Document in reasonable detail the facts and data used in the analysis and their sufficiency and reliability.
- Employ generally accepted accounting, engineering, and planning methodologies, including the buy-in, incremental cost or marginal cost, and combined cost methods for each service, setting forth appropriate analysis to the consideration and selection of an approach appropriate to the circumstances and adapted as necessary to satisfy all requirements of the Article.
- Document and demonstrate the reliable application of the methodologies to the facts and data, including all reasoning, analysis, and interim calculations underlying each identifiable component of the system development fee and the aggregate thereof.
- Identify all assumptions and limiting conditions affecting the analysis and demonstrate that they do not materially undermine the reliability of conclusions reached.
- Calculate a final system development fee per service unit of new development and include an equivalency or conversion table for use in determining the fees applicable for various categories of demand.
- Consider a planning horizon of not less than five years, nor more than 20 years.
- Use the gallons per day per service unit that the local government unit applies to its water or wastewater system engineering for planning purposes for water or wastewater, as appropriate, in calculating the system development fee.

This letter report documents the results of the calculation of water and wastewater system development fees for FY 2026 in accordance with these requirements. In general, system development fees are calculated based on (1) a cost analysis of the existing or planned infrastructure that is in place, or will be constructed, to serve new capacity demands, and (2) the existing or additional capacity associated with these assets. Article 8 is relatively explicit in the identification of infrastructure assets that may be included as part of the system development fee calculation, as the Article defines allowable assets to include the following types, as provided in Section 201: *"A water supply, treatment, storage, or distribution facility, or a wastewater collection, treatment, or disposal facility providing a general benefit to the area that facility serves and is owned or operated, or to be owned or operated, by a local governmental unit. This shall include facilities for the reuse or reclamation of water and any land associated with the facility."*

Therefore, the method used to calculate system development fees for the City included system facility assets that satisfied this definition.

Article 8 references three methodologies that can be used to calculate system development fees. These include the buy-in method, the incremental cost method, and the combined cost method. A description of each of these methods is included in the following paragraphs:

Capacity Buy-In Method:

Under the Capacity Buy-In Method, a system development fee is calculated based on the proportional cost of each user's share of existing system capacity. This approach is typically used when existing facilities can provide adequate capacity to accommodate future growth. The cost of capacity is derived by dividing the estimated value of existing facilities by the current capacity provided by existing facilities. Adjustments to the value of existing facilities are made for developer contributed assets, grant funds, and outstanding debt.

Incremental Cost Method:

Under the Incremental Cost (or Marginal Cost) Method, a system development fee is calculated based on a new customer's proportional share of the incremental future cost of system capacity. This approach is typically used when existing facilities have limited or no capacity to accommodate future growth. The cost of capacity is calculated by dividing the total cost of growth-related capital investments by the additional capacity provided as a result of the investments.

Combined Method:

Under the Combined Method, a system development fee is calculated based on the blended value of both the existing and expanded system capacity. As such, it is a combination of the Capacity Buy-In and Incremental Cost methods. This method is typically used when existing facilities provide adequate capacity to accommodate a portion of the capacity needs of new customers, but where significant investment in new facilities to address a portion of the capacity needs of future growth is also anticipated, or where some capacity is available in parts of the existing system, but incremental capacity will be needed for other parts of the system to serve new customers at some point in the future.

The *Buy-In* approach was used to calculate the water system development fee for the City, since there are no significant capacity-adding water projects planned in the Town's 10-year capital improvement plan (CIP). Based on a review of the data and discussions with City staff, the City's two wastewater treatment plants *in total* have capacity to accommodate future growth, but in order to utilize the total existing capacity in both wastewater treatment plants, capital improvement projects are needed to accommodate growth in the interim (as explained in more detail later in this report). As such, it was determined the most appropriate methodology to use for the wastewater system development fee is the *Combined* approach. The steps used to calculate the system development fees are provided below.

Fee Calculation – Existing System Value (Buy-In)

Step 1 – Estimate the Replacement Value of System Facilities and Apply Adjustments

A listing of fixed assets and newly purchased or constructed assets was provided by the City. Each item was reviewed and categorized into one of the categories shown in Table 1.

Table 1. Fixed Asset Categories

System Assets
Land & Easement
Treatment Plants
Lines
Equipment
Pumps & Tanks
Vehicles

Assets related to vehicles and other "non-core assets" were excluded from the calculation of system value as these assets were not specifically identified as allowable under Article 8. Excluded assets included those relating to vehicles and various types of equipment.

Next, the replacement value of existing assets in allowable categories was estimated. Each asset's net book value was escalated to 2025 dollars based on the year the asset was purchased and the corresponding escalation factor for that year, resulting in the replacement cost new less depreciation ("RCNLD") value of the system. Escalation factors for each year were developed using the Handy-Whitman index, which is an industry accepted method by which to value system facilities. The estimated RCNLD values for the water and wastewater systems assets allowable under Article 8 are summarized in Tables 2.

Table 2. Water and Wastewater System Value (RCNLD)

Descriptions	Water System	Wastewater System
Land & Easement	$1,089,638	$422,574
Treatment Plants	41,660,977	43,861,606
Lines	18,395,510	21,821,600
Pumps & Tanks	100,359	113,167
Total	**$61,246,483**	**$66,218,947**

As shown in Table 2, the RCNLD value of the water and wastewater systems were estimated to be approximately $61.2 million and $66.2 million, respectively. Several additional adjustments were made to the estimated RCNLD values in accordance with Article 8, as described below.

Developer Contributed/Grant Funded Assets:

The listing of fixed assets was reviewed to identify assets that were contributed or paid for by developers or funded by grants, and these assets were subtracted from the RCNLD value, as they do not represent an investment in system capacity by the City. The City's fixed asset listing did not identify contributed or grant funded assets on an individual asset basis, except for the I-77 project. In order to identify contributed or grant funded assets two sources were used. Historical comprehensive annual financial reports were obtained and contributed capital was identified. In addition, newly constructed infrastructure was reviewed with City staff most familiar with the infrastructure since the last system development fee study to identify contributed and grant funded assets. This information was used to estimate the portion of RCNLD related to contributed and grant funded assets. In addition, City staff identified recent grant funded assets associated with the I-77 wastewater project. The total RCNLD value of contributed and grant funded water and wastewater system assets was estimated to be $6,987,128 and $6,826,609, respectively.

Debt Credit:

A credit was applied to the RCNLD value to reflect that a portion of the outstanding debt associated with system facilities may be repaid with water and wastewater monthly user charges. The amount of the credit was calculated by estimating the amount of existing outstanding debt attributable to both the water and wastewater systems. The City's outstanding debt is comprised of several State Revolving Loans and loans from the City's electric fund. As of June 30, 2025, the total outstanding debt principal was $19,706,196, of which $4,151,029 is related to the water system and $15,555,166 is related to the wastewater system.

The resulting adjustments to the water and wastewater RCNLD values are summarized in Table 3.

Table 3. Calculation of Existing Water and Wastewater System Value

Description	Water Amount	Wastewater Amount
System Values:		
System Facilities RCNLD	$61,246,483	$66,218,947
Less: Contributed/Grant Funded Assets	(6,987,128)	(6,826,609)
Less: Outstanding Debt Principal	(4,151,029)	(15,555,166)
Net Water System Value	**$50,108,326**	**$43,837,172**

Step 2 – Calculate the Unit Cost of System Capacity

The cost per unit of system capacity was calculated by dividing the adjusted RCNLD values (derived in Step 1) by the water and wastewater system capacities. The City of Statesville currently has a total water treatment capacity of 15 MGD. Therefore, the cost per unit of system capacity for the existing water system was calculated to be $3.34 per gallon, per day ($50.1 million ÷ 15 MGD). The City currently has a total wastewater treatment capacity of 12 MGD. Therefore, the cost per unit of system capacity for the existing wastewater system was calculated to be $3.65 per gallon, per day ($43.8 million ÷ 12 MGD), summarized in Table 4.

Table 4. Cost per Unit of Existing System Capacity (GPD) – Buy-In Approach

Existing System	Water Amount	Wastewater Amount
Net System Value	$50,108,326	$43,837,172
System Capacity (MGD)	15.00	12.00
Unit Cost of Capacity ($ / gallon per day)	**$3.34**	**$3.65**

Fee Calculation – Combined Approach (Wastewater System)

Step 1 – Identify Value of System Facilities that will Serve New Growth and Apply Adjustments

The City has two wastewater treatment plants – the 3rd Creek wastewater treatment plant (WWTP) and the 4th Creek wastewater treatment plant. Each plant has a capacity of 6 MGD. The 4th Creek WWTP is operating near capacity and will need to be expanded to facilitate growth which is occurring in the proximity of this wastewater treatment plant. However, the 3rd Creek WWTP is operating well below capacity. To delay the need for the 4th Creek WWTP expansion, the City's capital improvement plan over the next 10

years identifies several projects to build infrastructure to divert flow from the 4th Creek WWTP to the 3rd Creek WWTP so that more capacity at the 3rd Creek WWTP can be utilized and allow the 4th Creek WWTP to accommodate growth in the interim. The cost of the capital improvement projects to connect these two plants to accommodate growth in the interim is $23.4 million, as shown in Table 5. As explained below, the only adjustment made to the projects is a "Debt Credit".

Section 207 of Article 8 states *"In applying the incremental cost or marginal cost, or the combined cost, method to calculate a system development fee with respect to capital improvements, the system development fee analysis must include as part of that methodology a credit against the projected aggregate cost of capital improvements. That credit shall be determined based upon generally accepted calculations and shall reflect a deduction of either the outstanding debt principal or the present value of projected water and wastewater revenues received by the local governmental unit for the capital improvements necessitated by and attributable to such new development, anticipated over the course of the planning horizon. In no case shall the credit be less than twenty-five percent (25%) of the aggregate cost of capital improvements".*

The City anticipates that the wastewater treatment projects to facilitate growth will be fully funded through debt[1]. Therefore, the net present value of future principal debt payments for the growth-related projects was deducted in the wastewater calculation, resulting in a net value of approximately $9.4 million as shown in Table 5.

Step 2 – Calculate the Unit Cost of System Capacity

Wastewater capital projects identified in the 10-year CIP will allow the City to accommodate growth by diverting flow to better utilize the City's existing capacity in total but will not add any additional wastewater treatment plant capacity. Because the Marginal Incremental Approach is based on total treatment capacity of the City's existing system, the total capacity used for the Marginal Incremental Approach remains at 12.0 MGD for the wastewater system. The cost per unit of system capacity for the wastewater system was calculated by dividing the net wastewater system value by the wastewater system capacity. Therefore, the cost per unit of system capacity for the wastewater system under the Marginal Incremental Approach was calculated to be $0.78 per gallon, per day ($9.4 million ÷ 12.0 MGD). Since the Combined Approach was chosen for calculating the wastewater system development fees, the cost per unit of future capacity, was added to the cost per unit of existing capacity, shown in Table 4. The Combined cost per unit of capacity therefore is calculated to be $4.44 per gallon ($3.65 gpd + $0.78 gpd).

[1] $23.4 million assumed to be funded over 25 years at 5.00% interest rate.

Table 5. Cost per Unit of Wastewater System Capacity (GPD) – Combined Approach (1)

Description	Amount	Total Treatment Capacity (MGD)	Unit Cost of Capacity ($ / gallon per day)
Net Wastewater System Value from **Buy-In** Approach (includes outstanding debt credit)	$43,837,172	12	$3.65
Wastewater System Value of Growth-Related Projects over next 10 Years	$23,430,000		
Less: Debt Credit	*-$14,020,246*		
Net Wastewater System Value of **Growth-Related** Projects over 10 Years	$9,409,754	12	$0.78
Net Wastewater System Value - Combined	**$53,246,926**	12	**$4.44**

(1) Reflects rounding.

Step 3 – Estimate the Amount of Capacity Per Service Unit of New Development

Section 205 of Article 8 states that the system development fee calculation *"…use the gallons per day per service unit that the local governmental unit applies to its water or wastewater system engineering for planning purposes for water or wastewater, as appropriate, in calculating the system development fee."* The City uses the State of North Carolina Department of Environmental Quality ("NCDEQ") 15A NCAC 02T .0114 for planning and engineering design purposes and utilizes these planning numbers for both the water and wastewater system, with one exception. The City has obtained sewer permitting flow reduction for the 4th Creek WWTP of 102 gallons per bedroom. Current census data for the City of Statesville indicates the average number of bedrooms for a single-family dwelling is three bedrooms[2]. To determine the residential ERU for the City's total service area, the ERU is weighted as shown in Table 6, resulting in an ERU for single-family customers of 333 gallons per day for both the water and wastewater systems.

Table 6. Single-Family ERU Calculation

Wastewater Treatment	Gallons per Bedroom	Total MGD Capacity	% Weighting	Weighted Gallons per Bedroom	Number of Bedrooms	ERU Single-Family Residence (gallons)
3rd Creek	120	6	50%	60		
4th Creek	102	6	50%	51		
Total				111	3	**333**

[2] https://data.census.gov/table/ACSDP5Y2024.DP04?g=160XX00US3764740_040XX00US37&d=ACS+5-Year+Estimates+Data+Profiles&hidePreview=true

Step 4 – Calculate the System Development Fee for One ERU

The system development fee for one ERU was calculated by multiplying the unit cost of capacity from Step 2 by the capacity demanded by one ERU from Step 3. The calculations are provided in Table 7.

Table 7. Calculation of Water and Wastewater System Development Fees for Single-Family ERU

System Development Fee Calculation	Water	Wastewater
Weighted Average	*Buy-In Approach*	*Combined Approach*
System Buy-In	**$3.34**	n/a
Combined Costs (GPD)	n/a	**$4.44**
Gallons per Day per ERU (GPD)	333	333
System Development Fee per ERU	**$1,112**	**$1,478**

Step 5 – Scale the System Development Fees for Various Categories of Demand

The system development fees for various categories of demand were scaled using water meter capacity ratios. The scaling factors were based on rated meter capacities for each meter size, as published by the American Water Works Association in Principles of Water Rates, Fees, and Charges, as shown in Table 8.[3]

Table 8. Water and Wastewater System Development Fees by Meter Size for Single-Family Customers, Multi-Family Customers with Master Meters, and Non-Residential Customers

Meter Size	Rated Meter Capacity (gpm*)	Scaling Factor
5/8" or ¾"Displacement	20	1.00
1" Displacement	50	1.67
1-1/2" Displacement	100	3.33
2" Displacement	160	5.33
3" Singlejet	320	10.67
3" Compound, Class I	320	10.67
3" Turbine, Class I	350	11.67
4" Singlejet	500	16.67
4" Compound, Class I	500	16.67
4" Turbine, Class I	630	21.00
6" Singlejet	1,000	33.33
6" Compound, Class I	1,000	33.33
6" Turbine, Class I	1,300	43.33
8" Compound, Class I	1,600	53.33
8" Turbine, Class II	2,800	93.33
10" Turbine, Class II	4,200	140.00
12" Turbine, Class II	5,300	176.67

*gpm = Gallons per minute

[3] Manual of Water Supply Practices (M1), Principles of Water Rates, Fees, and Charges, American Water Works Association, 8th Edition, Table C-2 on p. 340.

Maximum Cost Justified System Development Fees by Meter Size

The calculated water system development fee under the Buy-In Approach is $1,112 and the calculated wastewater system development fee under the Combined Approach is $1,478. As mentioned previously, the system development fees for various categories of demand are scaled by applying the water meter capacity ratios shown in Table 8. The resulting water and wastewater system development fees shown in Table 9 and Table 10 represent the maximum cost justified level of system development fees that can be assessed by the City of Statesville per Article 8. If the City chooses to assess fees that are less than those shown in the table, the adjusted fee amounts should still reflect the scaling factors by meter size, as shown in Table 8, and proportionally in Tables 9 and 10.

Table 9. Water and Wastewater System Development Fees by Meter Size

Meter Size	Water Fee	Wastewater Fee
5/8" or ¾" Displacement	$1,112	$ 1,478
1" Displacement	$1,854	$2,463
1-1/2" Displacement	$3,708	$4,925
2" Displacement	$ 5,933	$7,881
3" Singlejet	$11,866	$15,761
3" Compound, Class I	$11,866	$15,761
3" Turbine, Class I	$12,978	$17,239
4" Singlejet	$18,540	$24,627
4" Compound, Class I	$18,540	$24,627
4" Turbine, Class I	$23,361	$31,030
6" Singlejet	$37,080	$49,253
6" Compound, Class I	$37,080	$ 49,253
6" Turbine, Class I	$48,204	$64,029
8" Compound, Class I	$59,328	$78,805
8" Turbine, Class II	$103,824	$137,910
10" Turbine, Class II	$155,737	$ 206,864
12" Turbine, Class II	$196,525	$261,043

The system development fee for the 5/8" meter shown above will be adjusted for multi-family customers with *individual* meters per unit and with less than 3 bedrooms per unit. The adjustment will be based on the proportion of gallons per day for the multi-family unit in relation to the single-family ERU of 333 gallons per day, as shown in Table 10. The gallons per day for a multi-family unit is based on Session Law 2023-137[4].

Table 10. Water and Wastewater System Development Fees for Multi-Family Customers with an Individual 5/8" Meter per Unit and Less than 3 Bedrooms per Unit

Number of Bedrooms	Gallons per Day	% of Single Family ERU	Water Fee per Unit	Wastewater Fee per Unit
1 Bedroom	75	23% (75/333)	$251	$333
2 Bedrooms	150	45% (150/333)	$501	$666

[4] Source: December 13, 2023, letter from Michael Montebello, Supervisor NPDES Branch Chief regarding Session Law 2023-137 – Changes to Wastewater Design Flow Rates in 15A NCAC 02T.0114(b)

We appreciate the opportunity to assist the City of Statesville with the calculation of its water and wastewater system development fees. Should you have questions or need any additional information, please do not hesitate to contact me at 704-936-4436.

Sincerely,

RAFTELIS FINANCIAL CONSULTANTS, INC.

Elaine Conti,
Executive Vice President