RAFTELIS

July 24, 2023

Ms. Marie Strandwitz, PE
Utilities Director
Town of Hillsborough
105 East Corbin Street
Hillsborough, NC 27278

Subject: System Development Fee Study Update

Dear Ms. Strandwitz:

Raftelis Financial Consultants, Inc. ("Raftelis") has completed an evaluation to develop cost-justified water and sewer system development fees for fiscal year ("FY") 2024 for consideration by the Town of Hillsborough ("Town"). 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." The purpose of this report is to summarize Raftelis' conclusion related to cost-justified water and sewer system development fees. It is not intended to address anything else associated with the system development fees, such as the administration of these fees, etc.

The preparation of this report was developed by Raftelis for the Town 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 sewer 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 Town. It is the responsibility of the Town to ensure compliance of the system development fees with North Carolina General Statute 162A Article 8 – "System Development Fees." The scope of work does 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 Town.

In developing the conclusions contained within this report, Raftelis has relied on certain assumptions and information provided by the Town, who is most knowledgeable of the water and sewer system, its finances, etc. Raftelis has not independently verified the accuracy of the information provided by the Town. 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 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, is intended as such, and not as a representation of fact.

Background

System development fees are one-time charges assessed to new water and/or sewer 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. North Carolina General Statute 162A Article 8 ("Article 8") provides for the uniform authority to implement system development fees for public water and sewer systems in North Carolina and was passed by the North Carolina General Assembly and signed into law on July 20, 2017, and was modified by Session Law 2021-76 and House Bill 344, which was approved on July 2, 2021. 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 no later than July 1, 2018.[1] 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 approaches 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.
- Employs generally accepted accounting, engineering, and planning methodologies, including the buy-in, incremental cost or marginal cost, and combined methods for each service, setting forth appropriate analysis as to the consideration and selection of a method appropriate to the circumstances and adapted as necessary to satisfy all requirements of Article 8.
- 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 sewer system engineering for planning purposes for water or sewer, as appropriate, in calculating the system development fee.

This letter report documents the results of the calculation of water and sewer system development fees for FY 2023 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:

[1] The Town's system development fees in FY 2018 were prepared by Raftelis in accordance with the requirements set forth in Article 8.

"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 Town of Hillsborough included system facility assets that satisfied this definition.

Article 8 references three methodologies that could 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 Capacity Buy-In method was used to calculate the water and sewer system development fees for the Town, since in general, the Town's existing water and sewer treatment facilities have adequate capacity to accommodate anticipated future growth over the near term. The following steps were completed to calculate the fees under the Buy-In Method:

1. The replacement value of existing system facilities was calculated, and adjustments were made to derive a net replacement value estimate in accordance with Article 8. Adjustments to the calculated replacement value included deducting accumulated depreciation, developer contributions, and a portion of outstanding debt. A net system value was calculated by adding together these factors and subtracting the current outstanding principal.

2. The unit cost of system capacity was estimated by dividing the calculated system value from step 3 by the total capacity of the system. This includes the current capacity of the system (minus any capacity reserved for others by contract).
3. The amount of capacity assumed to be demanded by one service unit of new development was identified. One equivalent residential unit ("ERU") was defined as the smallest service unit of new development.
4. The system development fee for one service unit of development was calculated by multiplying the cost per unit of system capacity by the capacity associated with one ERU, as defined below.
5. The calculated system development fee for one ERU was scaled for different categories of demand.

Calculation of System Development Fees

Step 1 – Estimate the System Value and Apply Adjustments

A listing of fixed assets provided by the Town, as of June 30, 2022, was reviewed and each individual asset was categorized into one of the categories shown in Table 1. General assets, such as small equipment, administrative buildings, computers, and vehicles were not directly attributable to a specific category. These assets were excluded from the calculation of system value as these assets were not specifically identified as allowable under Article 8.

Table 1. Fixed Asset Categories by System

Water System	Sewer System
Building & Improvements	Building & Improvements
Distribution	Collection
Equipment	Equipment
Infrastructure	Infrastructure
Land	Land

Next, the replacement value of existing assets in allowable categories was estimated. Each asset's original cost, as contained in the fixed asset listing provided by the Town, was escalated to 2022 dollars based on the year the asset was purchased and the corresponding escalation factor for that year. Escalation factors for each year were developed using the Handy-Whitman Index ("HWI") for the South Atlantic Region, which provides an annual index value representing the relative change in construction costs for each year from 1908 to 2022. Using the HWI to estimate an asset's current replacement cost is an industry accepted method by which to value system facilities.

The replacement costs of the assets were adjusted by their indexed accumulated depreciation to derive the replacement cost new less accumulated depreciation ("RCNLD") amounts. The estimated RCNLD values for water and sewer system assets allowable under Article 8 are summarized in Table 2 and Table 3.

Table 2. Water System Value (RCNLD)

Description	RCNLD Value
Buildings & Improvements	$14,103,528
Distribution	30,031,408
Infrastructure	754,117
Land	5,510,234
Total	**$50,399,287**

Table 3. Sewer System Value (RCNLD)

Description	RCNLD Value
Buildings & Improvements	$22,906,109
Collection	19,405,164
Equipment	7,969
Infrastructure	190,373
Land	492,728
Total	**$43,002,342**

As shown above, the RCNLD value of the water system was estimated to be approximately $50 million, and the RCNLD value of the sewer system was estimated to be approximately $43 million. Additional adjustments were made to the estimated water and sewer system RCNLD values in accordance with Article 8, which included adjustments for developer contributed assets and a portion of outstanding debt, as described below.

Developer Contributed Assets:

The listing of fixed assets was reviewed to identify assets that were contributed, or paid for, by developers. The Town tracks assets that were contributed by developers and identifies them in the fixed asset register as such. These assets were subtracted from the RCNLD value, as these assets do not represent an investment in system capacity by the Town. The total RCNLD value of the contributed water and sewer system assets was estimated to be approximately $8.8 million and $10.3 million, respectively.

Debt Credit

Article 8 specifies that the buy-in calculation should be determined using generally accepted methods, including the consideration of debt credits and other generally accepted valuation adjustments. Article 8 also states that in applying the incremental cost or the combined cost methods to calculate a system development fee, the analysis must include a credit against the projected aggregate cost of capital improvements and that in no case shall the credit be less than 25 percent of the aggregate cost of capital improvements. In calculating the system development fees for the Town, a debt credit was included in the calculation as described below. Note that while the system development fee methodology used for the Town was neither the incremental cost or the combined cost methods, rather the buy-in method was used, debt credits of at least 25 percent of the individual net RCNLD values of the water system and the sewer system were incorporated into the fee calculation.

The debt credit was applied to reflect that a portion of the outstanding debt associated with system facilities to be repaid with water and sewer user charges and a portion will be repaid with system

development fee revenues. An adjustment was made to prevent recovering the cost of the assets twice, once when assessing system development fees for new customers, and then again when these customers pay user charges.

The amount of the credit was calculated by first identifying the amount of existing outstanding debt attributable to both the water and sewer systems that funded qualifying assets.

The total outstanding debt used to fund qualifying assets was approximately $25 million, based on the Town's debt records. The total amount of outstanding debt was allocated between the water and sewer systems based on the projects associated with each issuance, as described in the Town's 2021 Audited Comprehensive Financial Report. Debt issuances include revenue bonds and revolving loans.

The resulting adjustments to the water and sewer RCNLD values for a portion of outstanding debt are shown in Table 4.

Table 4. Debt Credit

Description	Water	Sewer
Outstanding Principal	-$14,301,994	-$10,712,524
Total Credit	**-$14,301,994**	**-$10,712,524**

The resulting adjustments to the water and sewer system values are shown in Table 5.

Table 5. Net System Value

Description	Amount
Water System:	
System Facilities RCNLD	$50,399,287
Less: Developer Contributed Assets	-8,830,157
Less: Credit for Outstanding Debt	-14,301,994
Net System Value	**$27,267,136**
Sewer System:	
System Facilities RCNLD	$43,002,342
Less: Developer Contributed Assets	-10,331,494
Less: Credit for Outstanding Debt	-10,712,524
Net System Value	**$21,958,324**

Step 2 – Calculate the Unit Cost of System Capacity

The cost per unit of system capacity was calculated by dividing the adjusted system values (derived in Step 1) by the water and sewer system capacities. The treatment capacity of the water system is currently 3 million gallons per day ("MGD"). Therefore, the cost per unit of system capacity for the water system was calculated to be $9.09 per gallon per day ($27,267,136 ÷ 3 MGD).

The treatment capacity of the sewer system is 2.259 MGD. Therefore, the cost per unit of system capacity for the sewer system was calculated to be $9.72 per gallon per day ($21,958,324 ÷ 2.259 MGD). This is illustrated in Table 6.

Table 6. Calculation of Water and Sewer System Unit Capacity Cost

Description	Water	Sewer
Net System Value	$27,267,136	$21,958,324
System Capacity (MGD)	3.00	2.259
Unit Cost of Capacity ($ / gallon per day)	**$9.09**	**$9.72**

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 sewer system engineering for planning purposes for water or sewer, as appropriate, in calculating the system development fee."* The Town uses the North Carolina Administrative Code 15A NCAC 02T.0114 Wastewater Design Flow Rates to define the level of demand associated with a typical, or average, residential customer, which is 120 gallons per day per bedroom.

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.

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

For non-residential customers, system development fees are scaled[2] for various categories of demand as specified by the North Carolina Administrative Code 15A NCAC 02T.0114 Wastewater Design Flow Rates, a sample of which is shown in Table 7.

Table 7. SDF Scaling Factors

Description	Gallons Per Day	Water Fee	Sewer Fee	Total
Residential				
One-bedroom	120	$1,091	$1,166	$2,257
Two-bedroom	240	$2,181	$2,333	$4,514
Three-bedroom	360	$3,272	$3,499	$6,771
Four-bedroom	480	$4,363	$4,666	$9,029
Five-bedroom	600	$5,453	$5,832	$11,286
Six-bedroom	720	$6,544	$6,999	$13,543
Non-Residential				
General business/office facilities	25 gal/employee	$227 per employee	$243 per employee	$470 per employee
Restaurant – Full Service	40 gal/seat	$364 per seat	$389 per seat	$752 per seat
Store – Without Food Service	100 gal/1,000 sq. ft.	$909 per 1,000 sq. ft.	$972 per 1,000 sq. ft.	$1,881 per 1,000 sq. ft.
Hotel (without in-room cooking)	120 gal/room	$1,091 per room	$1,166 per room	$2,257 per room

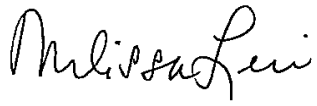
[2] The maximum cost justified system development fees for non-residential customers may also be calculated by dividing estimated flow from the Administrative Code by the one-bedroom gallons per day.

The water and sewer system development fees shown in Table 7 represent the maximum cost justified level of system development fees that can be assessed by Town of Hillsborough per Article 8. If the Town chooses to assess fees that are less than those shown in the table, the adjusted fee amounts should still reflect the scaling factors in North Carolina Administrative Code 15A NCAC 02T.0114 Wastewater Design Flow Rates, as shown in Table 7.

We appreciate the opportunity to assist the Town of Hillsborough with this important engagement. Should you have questions, please do not hesitate to contact me at (704) 373-1199.

Very truly yours,

RAFTELIS FINANCIAL CONSULTANTS, INC.



Melissa Levin
Vice President