Stantec

Pender County, NC

Water and Sewer System Development Fee Study

February 8, 2023

February 8, 2023

Katie Leubner,
Project Manager
Pender County Utilities & Solid Waste
Pender County, NC

Re: Water and Sewer
System Development Fee Study

Dear Ms. Leubner,

Stantec is pleased to present this Final Report on the Water and Sewer System Development Fee Study that we performed for Pender County, North Carolina. We appreciate the professional assistance provided by you and all the members of the County staff who participated in the Study.

If you have any questions, please do not hesitate to call us at (202) 585-6391. We appreciate the opportunity to be of service to the County and look forward to the possibility of doing so again in the future.

Sincerely,

David A. Hyder
Senior Principal

1101 14th Street NW
Washington DC 20005
(202) 585-6391
David.hyder@stantec.com

Enclosure

TABLE OF CONTENTS

1. INTRODUCTION

Stantec Consulting Services Inc. (Stantec) has conducted a Water and Sewer System Development Fee Study (Study) for Pender County's water and sewer systems (hereafter referred to as the "County" or "Utility"). This report presents the results of the comprehensive Study, including background information, legal requirements, an explanation of the calculation methodology employed, and the results of the analysis.

1.1 BACKGROUND

A system development fee is a one-time charge paid by a new customer to recover a portion or all of the cost of constructing water and sewer system capacity. The fees can also be assessed to existing customers requiring increased system capacity. In general, system development fees are based upon the costs of current and/or future utility infrastructure including, but not limited to, water supply facilities, treatment facilities, effluent disposal facilities, and transmission mains. System development fees serve as the mechanism by which growth can "pay its own way" and minimize the extent to which existing customers must bear the cost of facilities that will be used to serve new customers.

The County currently assesses water and sewer system development fees that are designed to recover the cost of water and sewer capacity from new connectors to each respective system. The County has retained the services of Stantec to calculate updated system development fees for each system in accordance with the North Carolina Public Water and Sewer System Development Fee Act, set forth in North Carolina General Statue 162A, Article 8.

1.2 LEGAL REQUIREMENTS

The Public Water and Sewer System Development Fee Act ("SDF Act") was approved on July 20th, 2017 and grants local government entities that own or operate municipal water and sewer systems the authority to assess system development fees for the provision of utility service to new development.

The SDF Act defines new development as 1) subdivision of land, 2) construction or change to existing structure that increases service needs or 3) any use of land which increased service needs within 1 year (no longer than 12 months) of a development fee being adopted.

According to the SDF Act, the following procedural requirements need to be followed in order to adopt a system development fee:

- **Requirement 1**: The fee should be calculated in a written analysis ("SDF Analysis") prepared by a financial professional or licensed professional engineer (qualified by experience and training or education) who employs generally accepted accounting, engineering, and planning methodologies to calculate system development fees for water and sewer systems, including the buy-in, incremental cost or marginal cost, and combined costs methods for each service; and that (1) documents the facts and data used in the analysis and their sufficiency and reliability; (2)

provides analysis regarding the selection of the appropriate method of analysis; (3) documents and demonstrates reliable application of the methodology to the facts and data, including all reasoning, analysis, and interim calculations underlying each identifiable component of the system development fee; (4) identifies all assumptions and limiting conditions affecting the analysis and demonstrates that they do not materially undermine the reliability of the conclusions reached; (5) calculates a system development fee per service unit of new development and includes an equivalency or conversion table to use in determining the fees applicable for various categories of demand; and (6) covers a planning horizon of between 5 and 20 years.

- **Requirement 2**: The system development fee analysis must be posted on the County's website, and the County must solicit comments and provide a means by which people can submit their comments, for a period of at least 45 days.
- **Requirement 3**: Comments received from the public must be considered by preparer of the system development fee analysis for possible adjustments to the analysis.
- **Requirement 4**: The County must hold a public hearing prior to considering adoption of the system development fees including any adjustments made as part of the comments received by the County.
- **Requirement 5**: The County must publish the system development fee schedule as part of its annual budget or fee ordinance.
- **Requirement 6**: The County cannot adopt a fee that is higher than the fee calculated by the professional analysis.
- **Requirement 7**: The County must update the system development fee analysis at least every five years.

In addition to the procedural requirements listed above, the SDF Act provides specific requirements pertaining to the calculation of the system development fees. These requirements are highlighted within the body of this report in concert with the calculation of the system development fees for the County. Further, the County must follow the SDF Act guidance when charging the system development fee: it may be charged only to "new development" and only at the time specified in the legislation; and new development must be given a credit for costs in excess of the development's proportionate share of connecting facilities required to be oversized for use of others outside of the development.

1.3 GENERAL METHODOLOGY

There are three primary approaches to the calculation of system development fees, all of which are outlined within the SDF Act. Each of the approaches are discussed below.

Buy-In Method

This approach determines the system development fees solely on the existing utility system assets. The replacement cost of each system's major functional components serves as the cost basis for the system

development fee calculation. This approach is most appropriate for a system with considerable excess capacity, such that most new connections to the system will be served by that existing excess capacity and the customers are effectively "buying-in" to the existing system, or limited capital improvement program (CIP).

Incremental/Marginal Cost Method

The second approach is to use the portion of each system's multi-year CIP associated with the provision of additional system capacity by functional system component as the cost basis for the system development fee calculation. This approach is most appropriate where 1) the existing system has limited or no excess capacity to accommodate growth, and 2) the CIP contains a significant number of projects that provide additional system capacity for each functional system component representative of the cost of capacity for the entire system.

Combined Cost Method

The third approach is a combination of the two previous approaches described. This approach is most appropriate when 1) there is excess capacity in the current system that will accommodate some growth, but additional capacity is needed in the near-term as reflected in each system's CIP, and 2) the CIP includes a significant number of projects that will provide additional system capacity.

While the SDF Act allows for the use of any one of the three methodologies discussed above, it specifies restrictions on how the revenues generated by the fees calculated using each methodology may be utilized. Table 1-1 summarizes each of the three methodologies, their typical application, and restriction of how the revenues can be utilized for each.

Table 1-1 Description of Methodologies & Restriction to Proceeds

Approach:	Description:	Fee Proceeds Allowed for:
Buy-In Method	New development shares in capital costs previously incurred which provided capacity for demand arriving with new development needs.	Expansion and/or rehabilitation projects. Since the buy-in method reimburses the system for certain past investments, proceeds can be utilized for all types of capital projects.
Incremental / Marginal Cost Method	New development share in capital costs to be incurred in the future which will provide capacity for demand arriving with new development needs.	Professional services costs in development of new fees and expansion costs (construction costs, debt service, capital, land purchase, other costs etc.) related to new development only. If no capital projects in next five years can be used for debt related to existing assets.

Approach:	Description:	Fee Proceeds Allowed for:
Combined Cost Method	Combination of Buy-In and Incremental / Marginal Cost methods	Professional services costs in development of new fees, expansion and/or rehabilitation costs. (same as both Buy-In and Incremental/Marginal Cost methods)

Given that the County has existing, but limited, capacity within both the water and sewer systems to sell, as well as capital spending planned over the next 10 years, the Combined Cost approach was chosen for the calculation of the system development fee for both the water and sewer systems. To comply with the SDF Act, the County will revisit the methodology at least every five years to determine if the approach for each system is still the most appropriate to use.

2. BASIS OF ANALYSIS

Using the Combined Cost approach, requires a Buy-In calculation and an Incremental/Marginal Cost calculation. The following outlines the process to determine the net value (cost basis) for each (water and sewer) system under the Combined Cost approach.

1) The County's existing major water and sewer system components assets are analyzed to determine the replacement cost if new less depreciation (RCNLD).
2) Any non-core system assets are excluded from the existing system value including items such as vehicles, meters, computer equipment and other non-core system assets.
3) Addition of spending on growth-related capital project over the next 10 years as identified in the County's official Capital Improvement Plan (CIP). This includes projects designated to add new capacity to the system, whether partially or entirely.
4) Any donated assets and/or assets not funded by the County (funded by grants, developers, etc.) are removed from the net system value (both existing assets and future within the capital improvement plan).
5) The net value of the water and sewer systems is further reduced by the outstanding principal on existing debt and the net present value of future debt over the planning period for each system to provide a revenue credit (the revenue credit must be equal to at least 25% of the cost of the expansion related projects).
6) The resulting net system value is used in the determination of the system development fee using capacity and level of service standards.

The following section outlines the details of the analysis completed during the Study to calculate the water and sewer system development fees.

2.1 BUY-IN NET SYSTEM VALUE

The County provided an asset inventory which included description, asset category/class, year placed in service, original cost, and useful life for each asset through FY 2022 for both the water and sewer systems. Each asset was classified by each major system function; and a replacement cost new less depreciation was calculated using the data provided by the County and the Engineering News Record Construction Cost Index. Any assets determined to be administrative and serve all systems and functions were split based on the overall allocation of classified assets.

The SDF Act requires that the system development fee calculations include provisions for credits against the value of the system to account for assets that were not funded by the municipality. Assets that were identified to be contributed or paid for by developers were excluded from the overall results to determine the net asset value of each system. In addition to donated assets, non-core system assets are also excluded from the determination of the net asset value of each system. These include meters, vehicles, equipment,

computers, and other. Results of the net asset value for the County's existing water and sewer systems based upon the asset records provided by County staff are shown in Tables 2-1 and 2-2.

Table 2-1 Replacement Cost New, Less Depreciation: Water System

Asset Category	RCNLD Value	Allocated Administrative Costs	Less Contributed Assets / Non-Core Asset	Net Asset Value
Treatment	$39,011,948	$ -	($11,724,031)	$27,287,917
Supply & Pumping	$22,123,490	$ -	($ -)	$22,123,490
Transmission & Distribution	$76,001,378	$ -	($8,199,812)	$67,801,566
Total	**$137,136,816**	**$ -**	**($19,923,843)**	**$117,212,973**

Table 2-2 Replacement Cost New, Less Depreciation: Sewer System

Asset Category	RCNLD Value	Allocated Admin Costs	Less Contributed Assets	Net Asset Value
Treatment	$24,393,243	$ -	($4,274,406)	$20,118,837
Pumping	$2,176,061	$ -	($497,012)	$1,679,049
Conveyance & Collection	$1,559,323	$ -	($980,653)	$578,669
Total	**$28,128,627**	**$ -**	**($5,752,072)**	**$22,376,555**

2.2 INCREMENTAL/MARGINAL COST NET SYSTEM VALUE

The County provided a 10-year, $169.3 million Capital Improvement Plan (CIP), which included the project description, total spending, and an indication of whether the project was designated for expansion or rehabilitation. To calculate the Incremental/Marginal Cost approach, all expansion-related projects that would increase capacity and support growth were identified. This totaled $155 million and included several water system projects, two sewer system projects, and both water and sewer extensions at the Pender Commerce Park.

The water system CIP includes several projects that will expand the water system's capacity over the next 10 years at a total cost of $123.5 million. This includes upgrades to the current surface water treatment plant, transmission and distribution improvements, new tanks and wells, and a new reverse osmosis water treatment plant. Expansion related capital projects for the water system are shown in Table 2-3.

Table 2-3 Expansion Related Capital Projects for the Water System

Project	Function	CIP Costs
SHWSD Elevated Tank & Wells	Supply and Pumping	$13,187,000
Pender Commerce Park Water & Sewer Extensions	Transmission & Distribution	$219,792
Misc. Small System Expansions/Loops	Transmission & Distribution	$ 1,550,000
CFPUA Interconnection @ US421	Transmission & Distribution	$588,100
6 MGD Raw Water Capacity - Purchase from Brunswick County	Supply and Pumping	$5,000,000
Western Pender Distribution Expansion	Transmission & Distribution	$15,000,000
New 0.7 MG Elevated Tank near existing Rocky Point	Supply and Pumping	$2,700,000
Water Transmission Improvements (Hwy 17 to Hampstead Tank)	Transmission & Distribution	$4,100,000
RO Water Treatment Plant & Associated Improvements (Scotts Hill)	Treatment	$78,750,000
Surface Water Treatment Plant Upgrade	Treatment	$2,400,000
Total Expansion Costs		**$123,494,892**

The County currently has two planned capital projects that will expand the capacity of the sewer system at a total cost of approximately $31.4 million. Table 2-4 identifies each of the projects that are included in the analysis for the sewer system.

Table 2-4 Expansion Related Capital Projects for the Sewer System

Project	Function	Growth Related CIP Costs
Pender Commerce Park Water & Sewer Extensions	Collection & Conveyance	$165,808
US 421 Pump Station	Pumping	$11,267,866
Pender Commerce Park Wastewater Treatment Plant (WWTP) Expansion	Treatment	$20,000,000
Total Expansion Costs		**$31,433,674**

The SDF Act requires that the total project costs be reduced by a revenue credit equal to a minimum of 25 percent of the cost of the capital projects included in the analysis when the Incremental/Marginal Cost is utilized. The SDF Act "Minimum Requirements" allow for the credit to be determined by "*either the outstanding debt principal or the present value of projected water and sewer revenues received by the local government unit for the capital improvements*." For this Study, the revenue credit was determined by removing the net present value of debt principal for the cost of the future capital projects that the County plans to finance over the 10-year CIP planning period. Specifically, of the $154.9 million in expansion costs the County plans to finance approximately $137.3 million. Furthermore, an additional credit was added

when necessary to ensure that the 25 percent revenue credit threshold was achieved. Table 2-5 presents the determination of the net system value given the credit for debt service.

Table 2-5 New System Value including Revenue Credits

	Water	Sewer
Total Expansion Costs	$123,494,892	$31,433,674
Outstanding Debt Principal	($45,288,563)	($7,731,069)
Additional Credit to Achieve 25%		($127,349)
Net System Value	**$78,206,329**	**$23,575,256**

2.3 SYSTEM CAPACITY

2.3.1 Existing System Capacity

The County's water and sewer systems consist of numerous functional components such as water treatment, source of supply and/or pumping, and transmission/conveyance. Each of the functional components have a physical or regulatory permitted capacity. While treatment, supply, and disposal capacities are readily available and generally accepted to be the physical or regulatory permitted capacity of such facilities, transmission system capacities are more difficult to quantify.

As such, it is common to define the capacity for all functional components (including the transmission or conveyance facilities) based on the system's total treatment capacity. This approach was utilized for the determination of the capacities of the County's utility systems. The rationale behind this decision is that even if the pumping or transmission/conveyance portion of either system is larger than that system's treatment capacity, the maximum capacity the system can offer to its connections is its total treatment capacity.

For the County's water system, the County owns and operates a Surface Water Treatment Plant. While permitted for a peak day capacity of 6.0 million gallons per day (MGD), it is currently capable of only treating 2.0 MGD of water from the Cape Fear River. Based on discussions with County staff, the capacity of 2.0 MGD was assumed for the system development fee analysis. The treatment plant capacity is supplemented by wells that provide 2.0 MGD at maximum capacity, 0.06 MGD from the Maple Hill district, and the purchase of 1.0 MGD from Wallace, NC. Total existing maximum day water system capacity used in the system development fee analysis is 5.06 MGD.

For the County's sewer system, the County owns and operates the Pender Commerce Park Wastewater Treatment Plant that has a capacity of 0.5 MGD. Additionally, it has additional 0.04 MGD capacity from the Maple Hill district sewer improvements and 0.25 MGD of the Rocky Point area permit from the Cape Fear Public Utilities Authority. A 0.79 MGD combined capacity was used as the existing sewer system capacity for the system development fee analysis.

2.3.2 Added System Capacity

The expansion related capital improvement projects identified in the County's CIP will all add capacity to the County's water and sewer systems.

The water system capital projects will increase the County's water system capacity to 15.76 MGD, an incremental change of 10.70 MGD. This includes allowing for 4.0 MGD to achieve full utilization of capacity at the water treatment plant. New elevated tanks at Rocky Point and Scott's Hill will increase the County's capacity by 3.7 MGD and a new reverse osmosis treatment plant will add another 3.0 MGD. For the sewer system, the capital project to expand the Pender Commerce Park WWTP provides an additional 1.0 MGD of incremental capacity. Table 2-6 summarizes the capacity by function used in the Combined Cost system development fee calculations.

Table 2-6 System Capacity by Function

	Water Capacity (MGD)		Sewer Capacity (MGD)	
	Source of Supply/ Treatment	**Transmission/ Distribution**	**Treatment**	**Conveyance / Collection**
Current Capacity	5.06	5.06	0.79	0.79
Capacity Expansion	10.7	10.7	1.0	1.0
Total System Capacity	**15.76**	**15.76**	**1.79**	**1.79**

2.4 COMBINED COST CALCULATION

As previously stated, the Combined Cost approach includes the net system assets in addition to the net capital project costs to reach the total system value of the utility. Table 2-7 summarizes the Combined Cost calculation for both the water and sewer system development fee calculation. It also provides the cost per gallon per day for system capacity based on the total capacity within each system.

Table 2-7 Combined Approach Cost per Gallon

	Water	Sewer
RCNLD Value of Existing Assets	$137,136,816	$28,128,627
Expansion Capital Projects	$123,494,892	$31,433,674
Total Value	**$260,631,708**	**$59,562,301**
Less Credits		
Outstanding Debt Principal	($45,288,563)	($7,731,069)
Donated Assets / Non-Core Assets	($19,923,843)	($5,752,072)
Revenue Credit (NPV of future debt principal over planning period)	($45,288,563)	($7,731,069)
Additional credit to meet 25% requirement	($ -)	($127,349)
Net System Value	**$145,851,302**	**$34,304,263**
System Capacity - Gallons per Day	**15,760,000**	**1,790,000**
Cost per Gallon Per Day	**$9.25**	**$19.16**
Escalated to Effective Implementation Year	**3%**	**3%**
Cost per Gallon Per day	**$9.53**	**$19.74**

2.5 LEVEL OF SERVICE STANDARDS

The SDF Act requires that system development fees be assessed based on a “Service Unit” which represents a unit of measure of system capacity, typically defined as an equivalent residential unit (ERU). Expressing the system capacities in terms of ERUs allows for the development of the unit pricing of capacity which is essential for the determination of system development fees. The basis for the determination of the ERU needs to be related to a specific level of service standard utilized by the local government for system engineering and planning purposes. The total system capacity (treatment capacity in million gallons per day for each system) divided by the level of service in gallons per day is equal to the total number of ERUs the County can serve with the system capacity.

The County’s current level of service standard follows the North Carolina state standard of 120 gallons per day per bedroom. With an assumption of 3 bedrooms per ERU, this results in a level of service of 360 gpd. The level of service utilized as part of this process represents average daily usage per ERU.

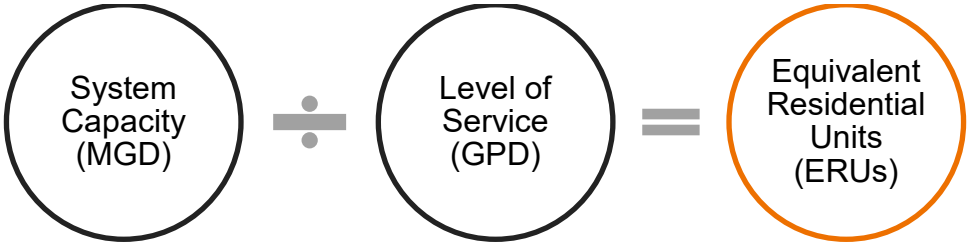

Table 2-8 presents the total ERUs within the water and sewer systems based on the existing and additional capacity added with the County's capital improvement plan.

Table 2-8 System ERUs

	Water	Sewer
System Capacity (gallons)	15,760,000	1,790,000
Level of Service (gpd)	360	360
Total ERUs	**43,778**	**4,972**

To determine the system development fees for non-single family residential connections, the County currently scales the water system development fees based on meter size. Sewer system development fees are currently applied based on estimated demands on a gallon per day basis to serve the new connection. Based on discussions with County staff, the use of estimated demands for the assessment of sewer system development fees has proven to be a challenge. The ability to obtain accurate estimates of actual use from new customers has been difficult and hard to administer. Most utilities address this issue by assessing the sewer system development fee by the meter size, just like the water fee. This approach is consistent with industry standards and is an acceptable means of determining the fees based on potential use of the system as defined by the maximum flow rate of the water meter. Table 2-9 presents the basis for the scaling factors and the resulting ERUs by meter size.

Table 2-9 Equivalent Residential Unit Scaling

Meter Size	Maximum Flow Rate (GPM)	Equivalent Residential Units (ERUs)
3/4"	30	1.00
1"	50	1.67
1 ½"	100	3.33
2"	160	5.33
3"	350	11.67
4"	500	16.67
6"	1,000	33.33
8"	1,600	53.33

3. RESULTS

This section summarizes the results of the Study, the existing and calculated system development fees, and conclusions and recommendations.

3.1 EXISTING WATER AND SEWER SYSTEM DEVELOPMENT FEES

The County currently charges system development by meter size for the water system and per gallon per day for the sewer system. The tables below summarize the existing system development fees collected by the County.

Table 3-1 Existing Water System Development Fees

Meter Size	Water
3/4"	$3,404
1”	$5,685
1.5”	$11,337
2”	$18,146
4”	$56,752
6”	$113,470
8”	$181,559

Table 3-2 Existing Sewer System Development Fees

Description	Sewer
Per Gallon Per Day	$23.55

3.2 CALCULATED WATER AND SEWER SYSTEM DEVELOPMENT FEES

To calculate the system development fees, the total unit cost per gallon for capacity described in Section 2 is multiplied by the level of service standard for an ERU of 360 gallons per day, which equates to $3,432 for water and $7,107 for sewer. Tables 3-4, 3-5 and 3-6 provide a schedule of the existing and calculated water, sewer and combined system development fees respectively based upon the cost and capacity information discussed in the Study by meter size. The scaling of the system development fee by meter size is intended to reflect the potential demand associated with each meter as described in Section 2 and is recommended to be applied for both water and sewer system development fees. This approach would eliminate the need to estimate new customers demands to determine the sewer system development fees.

Table 3-4 Water System Development Fee Schedule

Meter size	Current Water SDF	Calculated Water SDF	*Change*
3/4" (1 ERU)	$3,404	$3,432	*$28*
1"	$5,685	$5,720	*$35*
1 ½"	$11,337	$11,440	*$103*
2"	$18,146	$18,304	*$158*
3"	$39,713	$40,040	*$326*
4"	$56,752	$57,199	*$447*
6"	$113,470	$114,399	*$929*
8"	$181,559	$183,038	*$1,479*

Table 3-5 Sewer System Development Fee Schedule

Meter size	Current Sewer SDF	Calculated Sewer SDF	*Change*
3/4" (1 ERU)	$8,477	$7,107	*($1,370)*
1"	$14,128	$11,845	*($2,283)*
1 ½"	$28,257	$23,690	*($4,567)*
2"	$45,211	$37,904	*($7,307)*
3"	$98,898	$82,915	*($15,983)*
4"	$141,283	$118,450	*($22,833)*
6"	$282,567	$236,900	*($45,667)*
8"	$452,107	$379,040	*($73,067)*

Table 3-6 Combined System Development Fee Schedule

Meter size	Current Combined SDF	Calculated Combined SDF	*Change*
3/4" (1 ERU)	$11,881	$10,539	*($1,342)*
1"	$19,813	$17,565	*($2,248)*
1 ½"	$39,594	$35,130	*($4,464)*
2"	$63,357	$56,208	*($7,149)*
3"	$138,612	$122,955	*($15,657)*
4"	$198,035	$175,649	*($22,386)*
6"	$396,037	$351,299	*($44,738)*
8"	$633,666	$562,078	*($71,588)*

It is important to note that the County has discretion regarding the percentage of cost recovery utilized in the establishment of the system development fees. The system development fees can recover any amount up to, but not in excess of, the full cost recovery amounts identified herein for the calculated system development fees.

3.3 CONCLUSIONS AND RECOMMENDATIONS

Based upon the analysis presented herein, Stantec has developed the following conclusions and recommendations:

1) We recommend that the County adopt the calculated water and sewer system development fees as demonstrated in Tables 3-4, and 3-5. This includes the application of sewer system development fees based on the size of the water meter.
2) We recommend that the County review its development fees at least every five years to ensure that it follows requirements established by the SDF Act and to ensure that they remain fair and equitable and continue to reflect its current cost of capacity. As the County continues to expand its facilities, future changes in technology, demands, development patterns, or other factors may necessitate additional adjustments to its development fees.
3) We recommend that as part of any system development fee update, the County also evaluates the most appropriate accepted methodology for calculating its system unit cost of capacity as system capacity may change over time.

Disclaimer

This document was produced by Stantec Consulting Services, Inc. ("Stantec") for the Pender County and is based on a specific scope agreed upon by both parties. Stantec's scope of work and services do not include serving as a "municipal advisor" for purposes of the registration requirements of the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010) or the municipal advisor registration rules issued by the Securities and Exchange Commission. Stantec is not advising the Pender County, or any municipal entity or other person or entity, regarding municipal financial products or the issuance of municipal securities, including advice with respect to the structure, terms, or other similar matters concerning such products or issuances.

In preparing this report, Stantec utilized information and data obtained from the Pender County or public and/or industry sources. Stantec has relied on the information and data without independent verification, except only to the extent such verification is expressly described in this document. Any projections of future conditions presented in the document are not intended as predictions, as there may be differences between forecasted and actual results, and those differences may be material.

Additionally, the purpose of this document is to summarize Stantec's analysis and findings related to this project, and it is not intended to address all aspects that may surround the subject area. Therefore, this document may have limitations, assumptions, or reliance on data that are not readily apparent on the face of it. Moreover, the reader should understand that Stantec was called on to provide judgments on a variety of critical factors which are incapable of precise measurement. As such, the use of this document and its findings by Pender County should only occur after consultation with Stantec, and any use of this document and findings by any other person is done so entirely at their own risk.

APPENDIX: SUPPORTING SCHEDULES

Schedule 1: Summary of System Fixed Assets & Administration Cost Allocation

Function		Gross RCNLD Asset Value	Less Donated and Minor Equipment (Non-Core Assets)	Net RCNLD Asset Value	% of Total	Net Asset Value + Allocated Admin
Water	**Treatment**	$ 39,011,948	$ 11,724,031	$ 27,287,917	19.55%	$ 27,287,917
Water	**Supply and Pumping**	$ 22,123,490	$ -	$ 22,123,490	15.85%	$ 22,123,490
Water	**Transmission & Distribution**	$ 76,001,378	$ 8,199,812	$ 67,801,566	48.57%	$ 67,801,566
Sewer	**Treatment**	$ 24,393,243	$ 4,274,406	$ 20,118,837	14.41%	$ 20,118,837
Sewer	**Pumping**	$ 2,176,061	$ 497,012	$ 1,679,049	1.20%	$ 1,679,049
Sewer	**Collection & Conveyance**	$ 1,559,323	$ 980,653	$ 578,669	0.41%	$ 578,669
Total		**$ 165,265,443**	**$ 25,675,914**	**$ 139,589,529**	**100%**	**$ 139,589,529**

Schedule 2: Capital Improvement Summary

Function		Capital Improvement Costs	% of Total	Function Costs + Allocated Admin
Water	**Treatment**	$ 81,150,000	52.38%	$ 81,150,000
Water	**Supply and Pumping**	$ 20,887,000	13.48%	$ 20,887,000
Water	**Transmission & Distribution**	$ 21,457,892	13.85%	$ 21,457,892
Sewer	**Treatment**	$ 20,000,000	12.91%	$ 20,000,000
Sewer	**Pumping**	$ 11,267,866	7.27%	$ 11,267,866
Sewer	**Collection & Conveyance**	$ 165,808	0.11%	$ 165,808
Total Expansion CIP		**$ 154,928,566**		**$ 154,928,566**
Excluded Non-Expansion CIP		$ 14,350,000		$ 14,350,000
Total System CIP		**$ 169,278,566**		**$ 169,278,566**

Schedule 3: Capital Improvement Program Listing and Allocations

Project Name	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	Cost	Water Allocation	Sewer Allocation	% Growth	Growth Related CIP Cost
SHWSD Elevated Tank & Wells (only allowed 12 hours running)	13,187,000	-	-	-	-	-	-	-	-	-	-	$ 13,187,000	100%		100%	$ 13,187,000
Contractor Meter change-outs to drive-by (2500 meters/year)	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	-	-	-	-	-	-	$ 5,000,000	100%			$ -
PCU Warehouse & Shelter Facility Design	500,000	4,200,000	-	-	-	-	-	-	-	-	-	$ 4,700,000	100%			$ -
Pender Commerce Park Water & Sewer extensions	385,600	-	-	-	-	-	-	-	-	-	-	$ 385,600	57%	43%	100%	$ 385,600
Misc. small system expansions/loops (FY23 Batson Rd.)	350,000	-	-	-	-	500,000	-	-	-	700,000	-	$ 1,550,000	100%		100%	$ 1,550,000
CFPUA Interconnection @ US421	70,000	518,100	-	-	-	-	-	-	-	-	-	$ 588,100	100%		100%	$ 588,100
Booster Pump Station building repairs	60,000	-	-	-	-	-	-	-	-	-	-	$ 60,000	100%			$ -
6 MGD Raw Water Capacity - Purchase from Brunswick County	-	-	-	-	-	5,000,000	-	-	-	-	-	$ 5,000,000	100%		100%	$ 5,000,000
Western Pender Distribution Expansion	-	-	-	-	-	-	-	15,000,000	-	-	-	$ 15,000,000	100%		100%	$ 15,000,000
New 0.7 MG Elevated Tank near existing Rocky Point tank	-	-	-	-	-	-	-	-	2,700,000	-	-	$ 2,700,000	100%		100%	$ 2,700,000
Water Transmission Improvements (17 to Hampstead Tank)	-	-	-	-	-	-	-	-	-	4,100,000	-	$ 4,100,000	100%		100%	$ 4,100,000
RO Water Treatment Plant & Associated Improvements (Scotts Hill)	78,750,000	-	-	-	-	-	-	-	-	-	-	$ 78,750,000	100%		100%	$ 78,750,000
WTP NG Emergency Generator (75% grant)	1,500,000	-	-	-	-	-	-	-	-	-	-	$ 1,500,000	100%			$ -
Surface Water Treatment Plant Upgrade from 2 to 4 mgd	600,000	-	-	-	-	-	-	-	-	-	-	$ 600,000	100%		100%	$ 600,000
Surface Water Treatment Plant Upgrade from 4 to 6 mgd		-	-	-	-	-	-	-	-	-	1,800,000	$ 1,800,000	100%		100%	$ 1,800,000
WWTP Flood Control Berm (75% grant)	600,000	-	-	-	-	-	-	-	-	-	-	$ 600,000		100%		$ -
Outfall walkway improvements	-	250,000	-	-	-	-	-	-	-	-	-	$ 250,000		100%		$ -
Handicap ramp to office	-	15,000	-	-	-	-	-	-	-	-	-	$ 15,000		100%		$ -
New building - storage & workshop	-	-	-	1,500,000	-	-	-	-	-	-	-	$ 1,500,000		100%		$ -
Pender Commerce Park WWTP Expansion	-	-	-	-	-	-	20,000,000	-	-	-	-	$ 20,000,000		100%	100%	$ 20,000,000
US421 Sewer pump station FM & WM	11,267,866	-	-	-	-	-	-	-	-	-	-	$ 11,267,866		100%	100%	$ 11,267,866
Odor & Corrosion control at Regional PS	80,000	-	-	-	-	-	-	-	-	-	-	$ 80,000		100%		$ -
Pump Station ARV & switchgear rehabilitation	75,000	-	-	-	-	-	-	-	-	-	-	$ 75,000		100%		$ -
Maple Hill WWTP Engineering Evaluation	35,000	-	-	-	-	-	-	-	-	-	-	$ 35,000		100%		$ -
Remodel BASF guard shack for Maple Hill WWTP office/restroom	20,000	-	-	-	-	-	-	-	-	-	-	$ 20,000		100%		$ -
Maple Hill WWTP Upgrade	-	100,000	250,000	-	-	-	-	-	-	-	-	$ 350,000		100%		$ -
Actuator valves replacement	-	15,000	-	-	-	-	-	-	-	-	-	$ 15,000		100%		$ -
Maple Hill WWTP office facility	-	-	-	150,000	-	-	-	-	-	-	-	$ 150,000		100%		$ -
																$ -
	$ 108,480,466	**$ 6,098,100**	**$ 1,250,000**	**$ 2,650,000**	**$ 1,000,000**	**$ 5,500,000**	**$ 20,000,000**	**$ 15,000,000**	**$ 2,700,000**	**$ 4,800,000**	**$ 1,800,000**	**$ 169,278,566**				**$ 154,928,566**

Schedule 4: Capacity Summaries

Water System Capacity

Treatment

Water Treatment Plants	Existing Capacity (MGD)	Incremental Capacity (MGD)
Existing Capacity Expansion to 15.76	5.06	10.70
	5.06	10.70

Supply and Pumping

	Capacity (MGD)	Incremental Capacity (MGD)
	5.06	10.70
	5.06	10.70

Transmission & Distribution

	Capacity (MGD)	Incremental Capacity (MGD)
	5.06	10.70
	5.06	10.70

Sewer System Capacity

Treatment

Wastewater Treatment Plants	Capacity (MGD)	Incremental Capacity (MGD)
Existing Capacity Expansion to 1.79	0.79	1.00
	0.79	1.00

Pumping

	Capacity (MGD)	Incremental Capacity (MGD)
	0.79	1.00
	0.79	1.00

Collection & Conveyance

	Capacity (MGD)	Incremental Capacity (MGD)
	0.79	1.00
	0.79	1.00

Schedule 5: FY 2023 Water System Development Fee - Combined

Functional Component:		Treatment / Supply / Pumping	Transmission and Distribution	Total
Gross Plant in Service Value		$ 61,135,438	$ 76,001,378	$ 137,136,816
Total Expansion Capital Projects		102,037,000	21,457,892	123,494,892
Combined System Value		$ 163,172,438	$ 97,459,270	$ 260,631,708
Less:				
Principal Credit (Outstanding Debt)		$ 22,097,358	$ 27,470,642	$ 49,568,000
Specific Asset Contributions/Exclusions		11,724,031	8,199,812	19,923,843
General Allowance for Asset Contributions/Exclusions		-	-	-
Grants (Historical and Future)		-	-	-
Revenue Credit (Principal Future Debt during Planning Period)		37,419,435	7,869,128	45,288,563
Additional credit to meet 25% requirement		-	-	-
Net System Value		**$ 91,931,613**	**$53,919,689**	**$145,851,302**
Revenue Credit % Used in Fee Calculation				36.67%
Fee Calculation:				
Capacity				
Million Gallons Per Day (MGD)		15.76	15.76	
Level of Service (gpd)		360	360	
Equivalent Residential Units		43,778	43,778	
Initial Capacity Cost per ERU		$ 2,100	$ 1,232	$ 3,332
Allowance for Contingency	0.00%	$ 2,100	$ 1,232	$ 3,332
Percentage of Full Cost Recovery				100.00%
Escalation Factor to Effective Year				3.00%
Calculated Fee per ERU		**$ 2,163**	**$ 1,269**	**$ 3,432**
Current Fee per ERU		-	-	3,404
Dollar Change				$ 28
Percent Change				1%

Schedule 6: FY 2023 Sewer System Development Fee - Combined

Functional Component:		Treatment and Storage	Collection Conveyance and Pumping	Total
Gross Plant in Service Value		$ 24,393,243	$ 3,735,384	$ 28,128,627
Total Expansion Capital Projects		$20,000,000	$11,433,674	$31,433,674
Gross System Value		$ 44,393,243	$ 15,169,058	$ 59,562,301
Less:				
Principal Credit		$ 10,100,794	$ 1,546,754	$ 11,647,548
Specific Asset Contributions/Exclusions		4,274,406	1,477,666	5,752,072
General Allowance for Asset Contributions/Exclusions		-	-	-
Grants (Historical and Future)		-	-	-
Revenue Credit (Principal Future Debt during Planning Period)		4,918,973	2,812,097	7,731,069
Additional credit to meet 25% requirement		81,027	46,322	127,349
Net System Value		**$ 25,018,043**	**$ 9,286,220**	**$ 34,304,263**
Revenue Credit % Used in Fee Calculation				25.00%
Fee Calculation:				
Capacity				
Million Gallons Per Day (MGD)		1.79	1.79	
Level of Service (gpd)		360	360	
Equivalent Residential Units		4,972	4,972	
Initial Capacity Cost per ERU		$ 5,032	$ 1,868	$ 6,900
Allowance for Contingency	0.00%	$ 5,032	$ 1,868	$ 6,900
Percentage of Full Cost Recovery				100.00%
Escalation Factor to Effective Year				3.00%
Calculated Fee per ERU		**$ 5,183**	**$ 1,924**	**$ 7,107**
Current Fee per ERU				8,477
Change				$ (1,370)
Percent Change				-16%