



April 14, 2025

Ms. Amy McCaskill
Business Operations Director
500 N. Main Street,
Monroe, NC 28112

Re: 2025 Water and Sewer
System Development Fee Study

Dear Ms. McCaskill,

Stantec is pleased to present this Draft Report on the 2025 Water and Sewer System Development Fee Study that we performed for Union County, North Carolina. We appreciate the professional assistance provided by you and the members of the County staff who participated in the Study.

If you have any questions, please do not hesitate to contact us. We appreciate the opportunity to be of service to the County, and look forward to the possibility of doing so again in the near future.

Sincerely,

A handwritten signature in blue ink, appearing to read "Andrew Burnham".

Andrew Burnham
Vice President

777 S. Harbour Island Blvd. Suite 600
Tampa, Florida 33602
813 204-3331

A handwritten signature in black ink, appearing to read "Kevan Cook".

Kevan Cook
Manager

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Enclosure

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1. INTRODUCTION

Stantec Consulting Services Inc. (Stantec) has conducted a Water and Sewer System Development Fee Study (Study) for Union 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

The North Carolina General Statutes (NC G.S. 162A-201) define a system development fee as "a charge or assessment for service...imposed with respect to new development to fund costs of capital improvements necessitated by and attributable to such new development, to recoup costs of existing facilities which serve such new development, or a combination of those costs." In general, system development fees are based upon the costs of major backbone infrastructure necessary to provide service to all customers, including water supply facilities, treatment facilities, effluent disposal facilities, and transmission mains.

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 (SDF Act), set forth in North Carolina General Statute 162A, Article 8.

1.2 LEGAL REQUIREMENTS

The Public Water and Sewer System Development Fee Act, S.L. 2017-138, also known as House Bill 436 ("HB 436") became law on July 20, 2017, and grants local government entities that own or operate municipal water and wastewater systems, the authority to assess system development fees for the provision of water and sewer service to new development.

The SDF Act defines new development as 1) subdivision of land, 2) construction or change to any existing structure that increases the number of service units or 3) any use of land which increased the number of service units within one 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 to adopt a system development fee:

- **Requirement 1 (NC G.S. 161A – 205):** The fee should be calculated in a written analysis ("SDF Analysis"). The SDF Analysis should (1) be prepared by a financial professional or licensed professional engineer (qualified by experience and training or education) to calculate system development fees for public water and sewer systems; (2) document the facts and data used in the analysis and their sufficiency and reliability; (3) employ generally accepted accounting,

engineering, and planning methodologies, including the buy-in , incremental, or combined cost methods for each service setting forth appropriate consideration and selection of a method appropriate to the circumstances and to meet all of the SDF Act requirements; (4) document and demonstrate reliable application of the methodologies to facts and data underlying each identifiable component of the system development fee; (5) identify all assumptions and limiting conditions affecting that analysis and demonstrate that they do not materially undermine the reliability of the conclusion reached; (6) calculate a system development fee per service unit of new development and include an equivalency or conversion table to use in determining the fees applicable for various categories of demand; (7) cover a planning horizon of between 5 and 20 years; (8) be adopted by resolution or ordinance of the local governmental unit and (9) use the gallons per day per service unit that the local governmental unit applies to its water or sewer system engineering or planning as appropriate in calculating the system development fees.

- **Requirement 2 (NC G.S. 162A-209):** The system development fee analysis must be posted on the local governmental unit's website and a means by which public comments can be solicited / submitted must be provided, for a period of at least 45 days.
- **Requirement 3 (NC G.S. 162A-209):** Comments received from the public must be considered by the preparer of the system development fee analysis for possible adjustments to the analysis.
- **Requirement 4 (NC G.S. 162A-209):** The local governmental unit must hold a public hearing prior to considering adoption of the system development fees including any adjustments made as part of the public comments received by that local governmental unit.
- **Requirement 5 (NC G.S. 162A-209 (c)):** The system development fee schedule must be published as part of the local governmental unit's annual budget or rate plan or fee ordinance.
- **Requirement 6 (NC G.S. 162A-209):** The system development fee analysis shall be updated at least every five years.
- **Requirement 7 (NC G.S. 162A-207):** The local governmental unit cannot adopt a fee that is higher than the fee calculated by the professional analysis.

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 assessing the system development fee: it may be charged only to "new development" and only at the time specified in the legislation; furthermore, 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 ample 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 a 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 needed to accommodate new development 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 (N.C. GS 162A-211). Table 1-1 summarizes each of the three methodologies, their typical application, and restrictions on 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 Cost Method	New development shares in <u>capital costs previously incurred</u> which provided capacity for demand associated 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 of <u>capital costs to be incurred in the future</u> which will provide capacity for demand associated with new development needs.	Expansion costs related to new development only (construction, debt service, capital, land purchase, other costs etc.) and professional services costs in development of new fees. If no capital projects planned in the next five years, can be used for debt related to existing assets.
Combined Cost Method	Combination of Buy-In and Incremental / Marginal Cost methods	May be expended for previously completed capital improvements for which capacity exists and for capital rehabilitation projects.

The Incremental cost method was determined to be the most appropriate basis for the water and sewer system development fees. This was based upon the following:

- The County's water and sewer system has limited capacity within its existing infrastructure to accommodate new development.
- Multiple substantial expansion-related capital projects are planned in the next seven years, including the Catawba River Water Treatment Plant expansion project and the 12 Mile Creek Water Reclamation Facility expansion project.

To comply with the SDF Act, the County will revisit the methodology used as well as the calculation of its system development fees at least every five years.

2. BASIS OF ANALYSIS

The fundamental calculation used to determine the system development fees is presented in Figure 2-1. Each of the key components of the calculation vary depending on the specific methodology employed. The following sections, 2.1, 2.2, and 2.3, outline the details of the analysis completed during the Study to identify the components of the system development fee calculation discussed in the prior section of this report.

Figure 2-1 System Development Fee Calculation

$$\text{System Development Fee} = \frac{\text{Total System Value} - \text{Credits}}{\text{System Capacity}}$$

2.1 TOTAL SYSTEM VALUE

2.1.1 Incremental Approach

The following outlines the process to determine the total system value for the water and sewer systems under the Incremental approach.

- 1) Growth-related water and sewer capital projects over the next seven years as identified in the County's Capital Improvement Plan (CIP) were used as the cost basis (gross system value). This includes projects designated to add new capacity to the water and sewer systems, respectively.
- 2) The value of the water and sewer systems were reduced by a revenue credit equal to at least 25% of the cost of the expansion related projects (per NC G.S.162A-207). The result is the net system value used in calculating the system development fees.

The County provided a detailed 10-year Capital Improvement Plan (CIP), which included the project description, annual spending, and an indication of whether the project was designated as growth or rehabilitation. Both the water and sewer systems contain projected capital improvement projects expected to provide substantial additional capacity. The capital projects identified and used in this analysis are shown in Schedule 3 of the Appendix, and the water and sewer expansion-related capital are summarized in Table 2-1 and Table 2-2, respectively.

Table 2-1 Water System Expansion-Related Capital

	Source of Supply & Treatment	Transmission & Pumping
Expansion Capital Improvement Program Cost	\$114.8 M	\$20.3 M
Less: Revenue Credit	\$(28.7) M	\$(5.1) M
Net Water System Value	\$86.1 M	\$15.2 M

Table 2-2 Sewer System Expansion-Related Capital

	Collection	Treatment & Disposal
Expansion Capital Improvement Program Cost	\$28.1 M	\$30.2 M
Less: Revenue Credit	\$(7.0) M	\$(7.5) M
Net Sewer System Value	\$21.1 M	\$22.6 M

2.2 CREDITS

HB 436 requires that the calculations include provisions for credits against the value of the system to account for assets that are not funded by ratepayers. The credits included in this Study are discussed in the following subsections.

2.2.1 Revenue Credit

HB 436 requires that a credit be applied to capital improvement costs to account for the projected revenues received by system customers to pay for the expansion-related capital projects under the Incremental approach. This credit can be no less than 25% of the aggregate cost of capital improvements per NC G.S.162A-207. The County intends to use SDFs to pay for expansion-related capital projects to the greatest extent possible, so the minimum credit of 25% was used in the calculation of the updated water and sewer SDFs.

2.3 SYSTEM CAPACITY

Once the Total System Value and Credits were determined for the water and sewer systems, the next step was to determine the System Capacity for the water and sewer systems, defined as number equivalent residential units (ERUs) for purposes of this study. The total system capacity (treatment capacity in million gallons per day (MGD) for each system) divided by the level of service (approximate usage of each equivalent residential unit) in gallons per day is the total number of ERUs the County can serve.



2.3.1 System Capacity

The County's water and sewer systems consist of numerous functional components such as water treatment, source of supply, transmission, and storage. Each of the functional components have a physical or regulatory permitted capacity. While treatment, supply, and disposal capacities are generally accepted

to be either the physical or regulatory permitted capacity of such facilities and are readily available, transmission system capacities are more difficult to quantify. As such, it is common to define the capacity for all functional components (including the transmission facilities) based on system's total treatment capacity. This approach was utilized for the determination of the system capacities for the County's utility systems.

Table 2-3 summarizes the capacity by function used in the system development fee calculation. It should be noted that only the incremental capacity is considered per the Incremental approach used for the water and sewer SDF calculation. Schedule 5 of the Appendix show the detailed list of capacities by water and sewer, respectively.

Table 2-3 System Capacity by Function

	Water Source of Supply & Treatment	Water Transmission & Pumping	Sewer Collection	Sewer Treatment & Disposal
Incremental Capacity (MGD)	8.00	8.00	1.50	1.50

2.3.2 Level of Service

To facilitate the calculation of the system development fees it was necessary to determine the representative demand per ERU, or level of service. The demand per ERU is calculated based on ten-year average billed residential usage, from 2015-2024. The average monthly water usage per residential connection is 5,411 gallons per month, which results in an average daily usage per ERU of 180 gallons per day. Given that the water system capacity as discussed above in Section 2.3.1 of this report is defined in maximum day, a maximum day peaking factor of 1.70 is applied to the average use to account for the peak demands of each customer, which equates to a rounded total of 300 gallons per day on a maximum day basis. The peaking factor of 1.70 is the max of a ten-year (2015-2024) system maximum day ratio, based on annual data provided by staff.

A similar approach was utilized to define the sewer system demand per ERU. The average of the ten-year water usage per residential sewer connection is 5,089 gallons per month, which results in an average daily usage per ERU of 170 gallons per day. Given that the sewer system capacity as discussed in Section 2.3.1 of this report is defined as maximum month, a maximum month peaking factor of 1.47 is applied to the average use to account for the peak demands of each customer, which equates to rounded total of 250 gallons per day on a maximum month basis. Again, the peaking factor of 1.47 is the ten-year max system maximum month ratio, based on annual data provided by staff.

The calculated demands per ERU for the water and sewer systems are shown in Table 2-4.

Table 2-4 Calculation of Demand per ERU

Component	Water	Sewer
Average Daily Use (gallons)	180	170
Peaking Factor (2006-2021 average)	1.70	1.47
Demand (gallons per day) = 1 ERU	300	250

Once demand per ERU was identified, the total system capacity in MGD was divided by the demand per ERU, defining the total number of possible connections to each system as shown in Table 2-5.

Table 2-5 System Capacity in ERUs

Component	Water	Sewer
System Incremental Capacity (MGD)	8.00	1.50
Level of Service (gpd)	300	250
System Capacity (ERUs)	26,667	6,000

3. RESULTS

This section summarizes the results of the study, the calculated system development fees under each approach, conclusions, and recommendations.

3.1 CALCULATED SYSTEM DEVELOPMENT FEES

To calculate the system development fees, the net system value described in Section 2 for each system was divided by the system capacity in ERUs, as shown in Table 2-5, to determine the capacity cost per ERU. Table 3-1 presents the system development fees calculated per ERU for the water and sewer systems, as well as the current system development fees charged by the County. The detailed calculations are presented in Schedules 7 and 8 in the Appendix.

Table 3-1 demonstrates that the calculated fees for both water and sewer using the Incremental method are higher than the current water and sewer fees, respectively. This is mostly attributable to the \$114.8M Catawba River Water Treatment Plant expansion project for the water system, and the \$30.2M 12 Mile Creek Water Reclamation Facility expansion project for the sewer system.

The maximum allowable fee for both water and sewer results in an overall fee higher than the current combined water and sewer SDF. It is important to note that the County has discretion regarding the percentage of cost recovery utilized in the establishment of system development fees. The system development fees can recover any amount up to, but not more than the full cost recovery amounts identified herein. Additionally, the County has discretion on the timing of increases and could implement a phased-in approach in which the fees could be increased up to the maximum allowable amount over a period of years.

Table 3-1 Calculated System Development Fees (per ERU)

Calculation Methodology	Water	Sewer	Total
Current SDF	\$1,678	\$6,412	\$8,090
Calculated SDF	\$4,669	\$10,800	\$15,469

The system development fees shown in Table 3-1 represent the fees per unit of service defined as an ERU, which represents a 3/4" meter. The County currently charges larger meter sizes based on the relative capacity of each meter, based on the American Water Works Association's (AWWA) meter equivalency factors.¹ The following Tables 3-2 and 3-3 show the maximum allowable fee for each meter size compared to the County's current SDFs by meter size.

¹ American Water Works Association, M1 Principles of Water Rates, Fees, and Charges, Seventh Edition.

Table 3-2 Water System Development Fees by Meter Size

Meter Size	AWWA Meter Equivalent	Current Fee	Maximum Allowable Fee	Difference
3/4"	1.00	\$1,678	\$4,669	\$2,991
1"	1.67	\$2,802	\$7,797	\$4,995
1.5"	3.33	\$5,588	\$15,548	\$9,960
2"	5.33	\$8,944	\$24,886	\$15,942
3"	10.00	\$16,781	\$46,691	\$29,910
4"	16.67	\$27,974	\$77,833	\$49,859
6"	33.33	\$55,932	\$155,620	\$99,688

Table 3-3 Sewer System Development Fees by Meter Size

Meter Size	AWWA Meter Equivalent	Current Fee	Maximum Allowable Fee	Difference
3/4"	1.00	\$6,412	\$10,800	\$4,388
1"	1.67	\$10,709	\$18,036	\$7,327
1.5"	3.33	\$21,353	\$35,964	\$14,611
2"	5.33	\$34,178	\$57,564	\$23,386
3"	10.00	\$64,123	\$108,000	\$43,877
4"	16.67	\$106,893	\$180,036	\$73,143
6"	33.33	\$213,723	\$359,964	\$146,241

3.2 CONCLUSIONS AND RECOMMENDATIONS

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

- Based on the County's limited capacity and the magnitude of the planned expansion-related projects in the upcoming Capital Improvement Plan, the Incremental approach is the most appropriate methodology for calculating the water and sewer SDFs for Union County. The calculated maximum allowable SDF is \$4,669 per ERU and \$10,800 per ERU for the water and sewer systems, respectively.
- Stantec recommends that the County review its development fees at least every five years to ensure that it follows requirements established by the Public Water and Sewer System Development Fee Act, S.L. 2017-138 and to ensure that they remain fair and equitable and continue to reflect the County's 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.

Disclaimer

This document was produced by Stantec Consulting Services, Inc. ("Stantec") for Union 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 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 Union 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 the 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 Asset Listing, RCNLD Costs, and Functional Allocations
- Schedule 2 Summary of Assets
- Schedule 3 Capital Improvement Program and Functional Allocations
- Schedule 4 Capital Improvement Program Summary
- Schedule 5 Water & Sewer System Capacity
- Schedule 6 Water & Sewer Level of Service
- Schedule 7 Water Development Fee Calculation – Incremental
- Schedule 8 Sewer Development Fee Calculation – Incremental
- Schedule 9 Water & Sewer Fee Summary

Indicates Contributed/Excluded Asset						Water		Sewer								
Asset Number	Dept	Asset Description	Admin Allocation	Water Allocation	Sewer Allocation	Source of Supply/ Treatment Allocation	Transmission and Pumping Allocation	Collection Allocation	Treatment/ Disposal Allocation	Original Cost	Year Acquired	Net Book Value	ENR Escalation Factor (2024 Index)	% of Asset Contributed or Excluded	Contributed/ Excluded Assets Value	Net Asset Value
12212	71300	LAND STALLINGS TANK	0%	100%	0%	100%	0%	0%	0%	\$ 10,000	1985	\$ 10,000	3.24	0%	\$ -	\$ 32,351
12213	71300	LEGAL EXP FOR PURCHASE OF LAND/CATAWBA	0%	100%	0%	100%	0%	0%	0%	\$ 880	2001	\$ 880	2.14	100%	\$ 1,882	\$ -
12214	71300	LEGAL EXP FOR PURCHASE OF LAND/CATAWBA	0%	100%	0%	100%	0%	0%	0%	\$ 5,020	2000	\$ 5,020	2.18	100%	\$ 10,952	\$ -
12215	71300	RIVERSIDE ROAD PROPERTY 309.1786 ACRES	0%	100%	0%	0%	100%	0%	0%	\$ 542,160	2000	\$ 542,160	2.18	0%	\$ -	\$ 1,182,705
12219	71300	WATER LINE- BERRY TRI-PLAS	0%	100%	0%	0%	100%	0%	0%	\$ 29,199	1998	\$ 10,341	2.29	0%	\$ -	\$ 23,705
12220	71300	WATER LINE- BERRY TRI-PLAS	0%	100%	0%	0%	100%	0%	0%	\$ 61,491	1998	\$ 21,650	2.29	0%	\$ -	\$ 49,628
12246	71200	LAND BAKERS	0%	0%	100%	0%	0%	100%	0%	\$ 352,237	1982	\$ 352,237	3.55	0%	\$ -	\$ 1,249,754
12247	71200	LAND FOR PUMP STATION	0%	0%	100%	0%	0%	100%	0%	\$ 1,205	1983	\$ 1,205	3.34	0%	\$ -	\$ 4,022
12248	71200	LAND FOR PUMP STATION	0%	0%	100%	0%	0%	100%	0%	\$ 1,680	1983	\$ 1,680	3.34	0%	\$ -	\$ 5,607
12249	71200	LAND MARSHVILLE PUMP STATION	0%	0%	100%	0%	0%	100%	0%	\$ 16,236	1978	\$ 16,236	4.89	0%	\$ -	\$ 79,375
12251	71200	LAND SANDY RIDGE-ALLISON DEVAN	0%	0%	100%	0%	0%	100%	0%	\$ 112,913	1982	\$ 112,913	3.55	0%	\$ -	\$ 400,620
12253	71200	LAND WAXHAW-WATSON STEWART	0%	0%	100%	0%	0%	100%	0%	\$ 122,230	1982	\$ 122,230	3.55	0%	\$ -	\$ 433,677
12257	71200	WEDDINGTON ELEM SEWER LINES	0%	0%	100%	0%	0%	100%	0%	\$ 42,000	1995	\$ 1,283	2.48	0%	\$ -	\$ 3,183
12277	71200	DEAL ELEM SEWER	0%	0%	100%	0%	0%	100%	0%	\$ 460	1997	\$ 144	2.33	0%	\$ -	\$ 335
12278	71200	DEAL ELEM SEWER	0%	0%	100%	0%	0%	100%	0%	\$ 460	1997	\$ 146				

Indicates Contributed/Excluded Asset						Water		Sewer								
Asset Number	Dept	Asset Description	Admin Allocation	Water Allocation	Sewer Allocation	Source of Supply/ Treatment Allocation	Transmission and Pumping Allocation	Collection Allocation	Treatment/ Disposal Allocation	Original Cost	Year Acquired	Net Book Value	ENR Escalation Factor (2024 Index)	% of Asset Contributed or Excluded	Contributed/ Excluded Assets Value	Net Asset Value
		SCADA	100%	0%	0%	0%	0%	0%	0%	\$ 1,512,793	2025	1,512,793	1.00	0%	\$ -	\$ 1,512,793
		12-Mile Creek I & I Abatement	0%	0%	100%	0%	0%	100%	0%	\$ 818,026	2025	818,026	1.00	0%	\$ -	\$ 818,026
		SPCC Extension	0%	0%	100%	0%	0%	100%	0%	\$ 660,000	2025	660,000	1.00	0%	\$ -	\$ 660,000
		Poplin Force Main Relocation	0%	0%	100%	0%	0%	100%	0%	\$ 560,000	2025	560,000	1.00	0%	\$ -	\$ 560,000
		853 West Hydraulic Modeling	0%	0%	100%	0%	0%	100%	0%	\$ 100,000	2025	100,000	1.00	0%	\$ -	\$ 100,000
		CRWTP Mitigation	0%	100%	0%	0%	100%	0%	0%	\$ 35,866	2025	35,866	1.00	0%	\$ -	\$ 35,866
		Storage Tank Rehab	0%	100%	0%	100%	0%	0%	0%	\$ 475,000	2025	475,000	1.00	0%	\$ -	\$ 475,000
		Helmsville Force Main	0%	0%	100%	0%	0%	100%	0%	\$ 769,985	2025	769,985	1.00	0%	\$ -	\$ 769,985
		CVIP										-	0.00	0%	\$ -	\$ -
		Water										-	0.00	0%	\$ -	\$ -
		NCDOT Project 9-3329 - Monroe Expressway Betterments	0%	100%	0%	0%	100%	0%	0%	\$ 895,251	2025	895,251	1.00	0%	\$ -	\$ 895,251
		SCADA Master Plan	0%	100%	0%	100%	0%	0%	0%	\$ 3,467,364	2025	3,467,364	1.00	0%	\$ -	\$ 3,467,364
		Marshville Water Tank Rehab	0%	100%	0%	0%	100%	0%	0%	\$ 1,062,240	2025	1,062,240	1.00	0%	\$ -	\$ 1,062,240
		Yadkin Distribution System Imp	0%	100%	0%	100%	0%	0%	0%	\$ 3,295,515	2025	3,295,515	1.00	0%	\$ -	\$ 3,295,515
		Advanced Metering Infrastructure	0%	100%	0%	0%	100%	0%	0%	\$ 13,312,520	2025	13,312,520	1.00	0%	\$ -	\$ 13,312,520
		Shortline Water Ext FY 2020	0%	100%	0%	0%	100%	0%	0%	\$ 1,756,915	2025	1,756,915	1.00	0%	\$ -	\$ 1,756,915
		Northwest Tank Refurbishment	0%	100%	0%	0%	100%	0%	0%	\$ 765,169	2025	765,169	1.00	0%	\$ -	\$ 765,169

Function		Gross RCNLD Plant in Service Value	% of Total	Allocated Admin Costs	Specific Asset Contributions/ Exclusions	Net RCNLD Asset Value	Net Asset Value + Allocated Admin
Water	Source of Supply/ Treatment	\$ 414,697,279	51%	\$ 7,821,368	\$ 4,368,977	\$ 410,328,302	\$ 418,149,670
Water	Transmission and Pumping	\$ 173,700,853	15%	\$ 2,270,723	\$ 54,573,099	\$ 119,127,754	\$ 121,398,478
Sewer	Collection	\$ 202,214,598	16%	\$ 2,438,561	\$ 74,281,652	\$ 127,932,946	\$ 130,371,508
Sewer	Treatment/ Disposal	\$ 144,127,764	18%	\$ 2,742,070	\$ 271,968	\$ 143,855,796	\$ 146,597,866
Total		\$ 934,740,494	100%	\$ 15,272,723	\$ 133,495,695	\$ 801,244,798	\$ 816,517,521

Project Name	2025-2031 CIP	Source of Supply/ Treatment Allocation	Transmission and Pumping Allocation	Collection Allocation	Treatment/ Disposal Allocation	% Growth	Growth-Related CIP	Capacity Added (MGD)
853 South Zone Tank	\$ 478,000		100%			25%	\$ 119,500	
853 Zone Transmission Main Improvements	\$ 5,178,000		100%			25%	\$ 1,294,500	
Hwy 75 Pump Station Upgrades	\$ 2,936,000		100%			25%	\$ 734,000	
Indian Trail Additional Tank # 1 & Watkins BPS Improvements	\$ 17,161,000		100%			25%	\$ 4,290,250	
853 West Zone Transmission Main Phase 3	\$ 9,500,000		100%			25%	\$ 2,375,000	
853 West Zone Transmission Main Phase 5	\$ 9,000,000		100%			25%	\$ 2,250,000	
853 West Zone Transmission Main Phase 6	\$ 3,500,000		100%			25%	\$ 875,000	
935 Zone Tank	\$ 6,381,000		100%			25%	\$ 1,595,250	
762 Zone Transmission Main	\$ 11,368,000		100%			0%	\$ -	
Crooked Creek Interceptor Improvements Ph 4	\$ 11,593,000			100%		25%	\$ 2,898,250	
Forest Park Forcemain & Interceptor Improvements	\$ 5,541,000			100%		25%	\$ 1,385,250	
Crooked Ck Improvements	\$ 30,000,000			100%		0%	\$ -	
CRWTP Expansion	\$ 114,838,000	100%				100%	\$ 114,838,000	8
Developer Funded Projects	\$ 38,412,000					0%	\$ -	
880 Transmission Main	\$ 7,430,000		100%			25%	\$ 1,857,500	
YRWSP Distribution System Improvements	\$ 300,000		100%			25%	\$ 75,000	
East Fork Interceptor Improvements	\$ 53,952,000			100%		25%	\$ 13,488,000	
Price Mill Creek Sewer Improvements	\$ 5,398,000			100%		25%	\$ 1,349,500	
Upper East Fork Sewer Improvements	\$ 7,752,000			100%		25%	\$ 1,938,000	
Molly Branch Sewer Improvements	\$ 668,000			100%		25%	\$ 167,000	
Ops Center Expansion - SW and NE Additional and Partial Renovation Planning	\$ 17,500,000					0%	\$ -	
Collection System SSES & Rehab	\$ 3,198,919			100%		0%	\$ -	
WW Pump Station Improvements (Holding Tank)	\$ 5,927,414			100%		0%	\$ -	
Wastewater R & R Program	\$ 16,076,068			100%		0%	\$ -	
Septic Tank Assessment	\$ 9,304,302			100%		0%	\$ -	
Water R&R - FY20 -FY2033	\$ 15,640,000		100%			0%	\$ -	
Storage Tank Rehabilitation FY18 - Forward	\$ 1,625,000		100%			0%	\$ -	
WWTP R&R	\$ 15,600,181				100%	0%	\$ -	
821 Zone Providence Road BPS Supply	\$ 15,857,000		100%			25%	\$ 3,964,250	
853 East Zone Elevated Tank	\$ 3,302,000		100%			25%	\$ 825,500	
S Branch Poplin Basin Sewer Improvements	\$ 9,464,000			100%		25%	\$ 2,366,000	
Hunley PS Improvements	\$ 18,050,000			100%		25%	\$ 4,512,500	
Total 2025-2031 Capital Improvement Program Cost		\$ 472,930,884					\$ 163,198,250	

Function		2025-2031 CIP	
Water	Source of Supply/ Treatment	\$	114,838,000
Water	Transmission and Pumping	\$	20,255,750
Sewer	Collection	\$	28,104,500
Sewer	Treatment/ Disposal	\$	-
Total Expansion CIP		\$	163,198,250
Excluded Non-Expansion CIP		\$	309,732,634
Total 2023-2027 Capital Improvement Program		\$	472,930,884

Source of Supply/Treatment

Water Treatment Plants	Existing Capacity (MGD)	Incremental Capacity (MGD)
Catawba River WTP (CRWTP)	20.00	8.00
Yadkin WTP	12.00	
	32.00	8.00

Transmission/Pumping

	Existing Capacity (MGD)	Incremental Capacity (MGD)
Transmission Capacity	32.00	8.00
	32.00	8.00

Treatment/Disposal

Wastewater Treatment Plants	Existing Capacity (MGD)	Incremental Capacity (MGD)
Water Reclamation Facilities	2.22	
12M Creek WWTP	9.00	1.50
	11.22	1.50

Collection

	Existing Capacity (MGD)	Incremental Capacity (MGD)
Collection Capacity	11.22	1.50
	11.22	1.50

Water Level of Service

Fiscal Years	FY 2015	FY 2016	FY 2017	FY 2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
Residential Water & Sewer Accounts (Incl. Water Only)	42,382	43,696	44,972	46,696	47,605	48,862	50,392	51,934	53,668	54,656
Annual Residential Billed Water Consumption (Kgal)	2,792,805	3,111,980	3,155,926	2,971,030	3,017,623	3,262,857	3,248,276	3,285,891	3,245,968	3,282,412
Total System Monthly Usage Per ERU (kgal)	5.49	5.93	5.85	5.30	5.28	5.56	5.37	5.27	5.04	5.00

Average Monthly Usage per ERU (kgal)	5.41
Daily Usage per ERU (gpd)	180
Peaking Factor	1.70
Peak Usage per ERU (gpd)	300

Sewer Level of Service

Fiscal Years	FY 2015	FY 2016	FY 2017	FY 2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
Residential Water & Sewer Accounts	31,168	32,421	33,378	34,497	35,559	36,722	38,115	39,541	41,091	41,964
Annual Residential Billed Sewer Consumption (Kgal)	2,157,162	1,993,211	2,133,946	2,064,458	2,105,406	2,283,692	2,329,265	2,365,739	2,326,859	2,403,184
Total System Monthly Usage Per ERU (kgal)	5.77	5.12	5.33	4.99	4.93	5.18	5.09	4.99	4.72	4.77

Average Monthly Usage per ERU (kgal)	5.09
Daily Usage per ERU (gpd)	170
Peaking Factor	1.47
Max Month Usage per ERU (gpd)	250

Water Max Day Factor For Level of Service

Fiscal Year	Average Day (MGD)	Max Day (MGD)	Peaking Factors
2015	12.47	20.41	1.64
2016	13.10	22.20	1.70
2017	13.88	21.16	1.52
2018	13.87	22.36	1.61
2019	14.16	23.72	1.67
2020	14.23	22.29	1.57
2021	14.21	22.49	1.58
2022	15.02	24.56	1.64
2023	15.14	21.64	1.43
2024	15.74	24.45	1.55

Sewer Max Month Factor For Level of Service

Fiscal Year	Average Day (MGD)	Max Month (MGD)	Peaking Factors
2015	8.36	10.50	1.26
2016	9.29	13.04	1.40
2017	8.04	11.71	1.46
2018	8.27	10.02	1.21
2019	9.96	13.47	1.35
2020	9.68	13.05	1.35
2021	9.94	14.62	1.47
2022	9.13	10.81	1.18
2023	9.25	10.99	1.19
2024	10.11	13.96	1.38

Functional Component:	Source of Supply/ Treatment	Transmission and Pumping	Total
Capital Improvement Cost	\$ 114,838,000	\$ 20,255,750	\$ 135,093,750
Less:			
Revenue Credit (Principal Future Debt during Planning Period)	28,709,500	5,063,938	33,773,438
Net System Value	\$ 86,128,500	\$ 15,191,813	\$ 101,320,313
Revenue Credit % Used in Fee Calculation			25.00%
<i>Fee Calculation:</i>			
Capacity			
Million Gallons Per Day (MGD)	8.00	8.00	
Level of Service (gpd)	300	300	
Equivalent Residential Units	26,667	26,667	
Initial Capacity Cost per ERU	\$ 3,230	\$ 570	\$ 3,800
Escalation Factor to Effective Year			6.87%
Calculated Fee per ERU	\$ 3,452	\$ 609	\$ 4,061
Current Fee per ERU			1,678
Dollar Change			\$ 2,383
Percent Change			142%

Functional Component:	Collection	Treatment/ Disposal	Total
Capital Improvement Cost	28,104,500	30,190,000	58,294,500
Less:			
Revenue Credit (Principal Future Debt during Planning Period)	\$ 7,026,125	\$ 7,547,500	\$ 14,573,625
Net System Value	\$ 21,078,375	\$ 22,642,500	\$ 43,720,875
Credit % Used in Fee Calculation			25.00%
<i>Fee Calculation:</i>			
Capacity			
Million Gallons Per Day (MGD)	1.50	1.50	
Level of Service (gpd)	250	250	
Equivalent Residential Units	6,000	6,000	
Initial Capacity Cost per ERU	\$ 3,513	\$ 3,774	\$ 7,287
Escalation Factor to Effective Year			0.00%
Calculated Fee per ERU	\$ 3,513	\$ 3,774	\$ 7,287
Current Fee per ERU			6,412
Change			\$ 875
Percent Change			14%

Water					Sewer					Combined			
Meter Size	AWWA Meter Equivalent	Current System Development Fee	Calculated System Development Fee	\$ Difference	Meter Size	AWWA Meter Equivalent	Current System Development Fee	Calculated System Development Fee	\$ Difference	Meter Size	Current System Development Fee	Calculated System Development Fee	\$ Difference
3/4"	1.00	\$1,678	\$4,669	\$ 2,991	3/4"	1.00	\$6,412	\$10,800	\$ 4,388	5/8" x 3/4"	\$8,090	\$15,469	\$ 7,379
1"	1.67	\$2,802	\$7,797	\$ 4,995	1"	1.67	\$10,709	\$18,036	\$ 7,327	1"	\$13,511	\$25,833	\$ 12,322
1.5"	3.33	\$5,588	\$15,548	\$ 9,960	1.5"	3.33	\$21,353	\$35,964	\$ 14,611	1.5"	\$26,941	\$51,512	\$ 24,571
2"	5.33	\$8,944	\$24,886	\$ 15,942	2"	5.33	\$34,178	\$57,564	\$ 23,386	2"	\$43,122	\$82,450	\$ 39,328
3"	10.00	\$16,781	\$46,691	\$ 29,910	3"	10.00	\$64,123	\$108,000	\$ 43,877	3"	\$80,904	\$154,691	\$ 73,787
4"	16.67	\$27,974	\$77,833	\$ 49,859	4"	16.67	\$106,893	\$180,036	\$ 73,143	4"	\$134,867	\$257,869	\$ 123,002
6"	33.33	\$55,932	\$155,620	\$ 99,688	6"	33.33	\$213,723	\$359,964	\$ 146,241	6"	\$269,655	\$515,584	\$ 245,929