



Catawba County

# Water and Sewer System Development Fee Study

October 11, 2024





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Mr. Jack Chandler  
Assistant Director, Catawba  
County Utilities & Engineering  
25 Government Drive  
Newton, NC 28658

Re: Water and Sewer Water  
System Development Fee Study

Dear Mr. Chandler,

Stantec is pleased to present this Draft Report for the Water and Sewer System Development Fee Study (Study) that we performed for Catawba County, North Carolina (County) and for the Southeastern Catawba County Water and Sewer District (SECC). We appreciate the professional assistance provided by you and all of the members of the County staff who participated in the Study.

If you have any questions, please do not hesitate to call me at (813) 269-6010. 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,

*Leticia Doohaluk*

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Enclosure

# TABLE OF CONTENTS

<b>1. Introduction.....</b>	<b>1</b>
1.1 Background .....	1
1.2 Legal Requirements .....	2
1.3 General Methodology .....	3
<b>2. Basis of System Development Fee Analysis.....</b>	<b>5</b>
2.1 System Development Fee Calculation.....	5
<b>3. Catawba County System Development Fee .....</b>	<b>7</b>
3.1 Catawba County Net System Value .....	7
3.2 Catawba County System Capacity In ERU.....	9
<b>4. SECC District System Development Fee .....</b>	<b>11</b>
4.1 SECC District Net System Value .....	11
4.2 SECC District System Capacity In ERU .....	13
<b>5. Results.....</b>	<b>15</b>
5.1 County and SECC District Calculated system Development fees.....	15
5.2 Conclusions and Recommendations .....	16
<b>Appendix: Supporting Schedules.....</b>	<b>19</b>

# 1. INTRODUCTION

Catawba County partners with municipal water and sewer service providers so that those services can be extended into unincorporated areas of the County. The County has historically charged water and sewer system development fees for new customers so that costs associated with that partnership between the County and other municipalities can be recovered.

The North Carolina Department of Transportation (“NCDOT”) is funding road work within the Catawba County region. For cost efficiencies, Catawba County Water & Sewer Utility will be prioritizing the maintenance, repair and replacement of underground utility assets such as pipes which coincide with planned NCDOT road work.

Furthermore, Catawba County Water & Sewer Utility (here after referred to as “County” or “Utility”), is going through a restructuring which will give origin to a new service area district, the Southeastern Catawba County Water and Sewer District (hereafter referred to as “SECC” or “District”). As part of this restructuring Catawba County’s existing utility assets and capacity will be split between both entities, District and County.

As such, the County has requested that Stantec Consulting Services Inc. (Stantec) update its system development fee (here after referred to as “SDF”) calculation based on the formation of the District. Moreover, as part of this Study, Catawba County also requested that Stantec calculate new system development fees for the SECC as part of the District’s formation. The calculation of both the County’s and the District’s SDF’s and all of the information presented herein are also referred to as SDF Analysis throughout this document.

This report presents the results of the 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 these 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.

As the existing County water and sewer systems will now be split between the County and the District, Catawba County has retained the services of Stantec to calculate updated system development fees for each system (water and sewer) and for each entity (County and District) in accordance with the North Carolina Public Water and Sewer System Development Fee Act, set forth in North Carolina General Statute 162A, Article 8.

## 1.2 LEGAL REQUIREMENTS

The Public Water and Sewer System Development Fee Act (“SDF Act”) was approved on July 20<sup>th</sup>, 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 the number of service units or 3) any use of land which increased the number of service units within 1 year (not 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 (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 demonstrates 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 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):** The system development fee schedule must be published as part of the local governmental unit's annual budget or fee ordinance.

- **Requirement 6 (NC G.S. 162A-207):** The local governmental unit cannot adopt a fee that is higher than the fee calculated by the professional analysis.
- **Requirement 7 (NC G.S. 162A-209):** The system development fee analysis shall be updated 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 and the District. Further, both the County and the District must follow the SDF Act guidance when assessing the system development fee: system development fees 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 existing 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 limited capital improvement program (CIP).

### *Incremental/Marginal Cost Method*

The second approach is to use the portion of each system’s multi-year Capital Improvement Program (“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 (N.C. GS 162A-211). 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**

Approach:	Description:	Fee Proceeds Allowed for:
<b>Buy-In Method</b>	New development shares in <u>capital costs previously incurred</u> 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.
<b>Incremental / Marginal Cost</b>	New development shares in <u>capital costs to be incurred in the future</u> 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 (expansion-related) only. If no capital projects in next five years can be used for debt related to existing assets.
<b>Combined Cost</b>	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.

Given that ample transmission capacity existing in the County's water and sewer systems to serve new development and the lack of planned capital improvement projects within the County, the Buy-In Method is recommended for determination of water and sewer system development fees in the County. This approach calculates system development fees that reflect the most current estimates of existing capacity to accommodate new connections to the County's water and sewer systems.

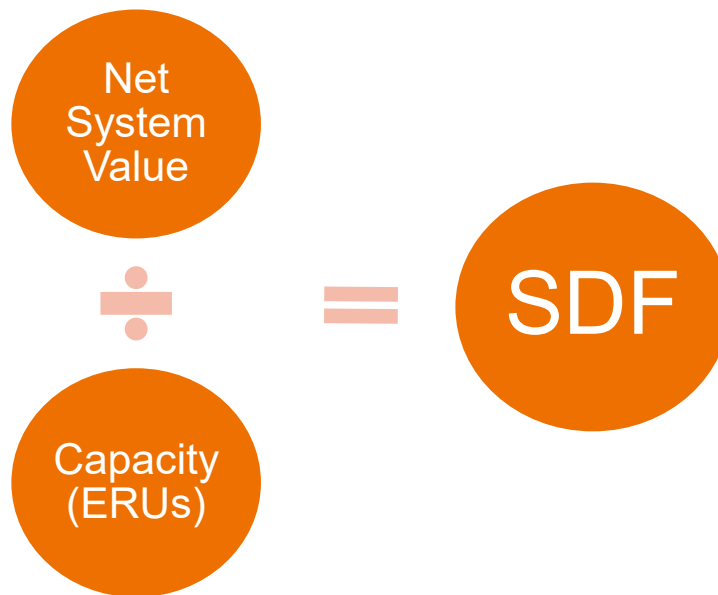
The District's capital improvement plan includes projects designed to increase the capacity of the water and sewer systems which are necessary to serve new development. As such, the Incremental Method is recommended for the determination of the District's water and sewer system development fees. This approach calculates system development fees that reflect the most current estimates of future capacity to accommodate new connections to the District's water and sewer systems.

## 2. BASIS OF SYSTEM DEVELOPMENT FEE ANALYSIS

### 2.1 SYSTEM DEVELOPMENT FEE CALCULATION

To calculate the system development fee (SDF) per equivalent residential unit (ERU) for each major system (water and sewer systems), the Net System Value of each system is divided by the capacity for each system expressed in terms of ERU.

**Figure 2-1 System Development Fee Calculation**

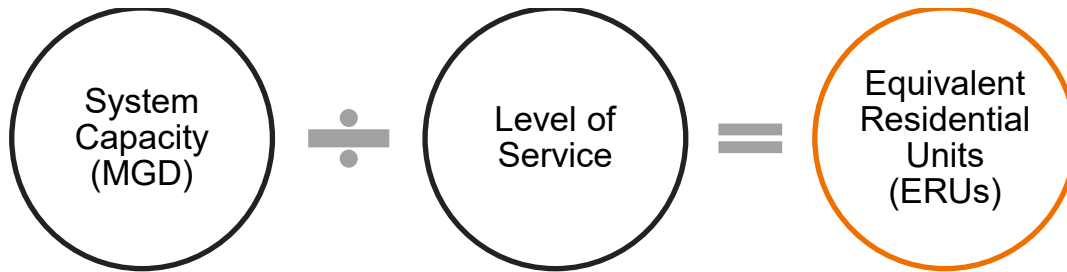


Expressing the system capacities in terms of ERU allows for the development of the unit pricing of capacity. Generally, the total system capacity divided by the level of service (LOS) is equal to the total number of ERUs the water or sewer system can serve, this is summarized in Figure 2-2 below.

The LOS is an indicator of the extent or degree of service provided by, or proposed to be provided by a facility, based on and related to the operational characteristics of the facility. Level of service indicates the capacity per unit of demand for each public facility or service. Level of service standards are established to ensure that adequate facility capacity will be provided for future development and for purposes of issuing development permits.

For water and sewer service, the level of service that is commonly used in the industry is the amount of capacity allocable to an ERU expressed as the amount of usage in gallons on an average day, maximum monthly or peak day basis. However, level of service can also be allocated on the basis of linear feet of frontage of water and sewer lines or other similar measure. This allocation would generally represent the amount of capacity allowable to an ERU, whether or not such capacity is actually used.



**Figure 2-2 Calculation of ERU**

The following section outlines the details of the analysis completed during the Study to determine the water and sewer system development fees for both Catawba County and the District.

## 3. CATAWBA COUNTY SYSTEM DEVELOPMENT FEE

### 3.1 CATAWBA COUNTY NET SYSTEM VALUE

Catawba County's system development fees have been calculated using the recommended Buy-In method, described in the General Methodology section of this report. As such only existing assets were used in the net system value calculation.

The process used to determine, the County's Net System Value, or cost of capacity, for each major system (water and sewer) is summarized below:

- Calculate the replacement cost new less depreciation (RCNLD) of the County's existing major water and sewer system components.
- Less, or credit back, any contributed assets and/or assets not funded by the County (Grants, Developers, etc.).
- Less, or a reduction, in the form of a credit for each system's outstanding principal on existing debt.

As part of this process the County provided Stantec with a list of all its existing assets. The list identified the split of existing assets between those being transferred to the District and those staying with the County at the time of District formation. For calculating the County's system development fees, only assets not being transferred to the District, or remaining with the County were used.

For each asset, the County identified the original costs, useful life, year placed in service and contributions and/or grant funding. Stantec used each asset's original costs, year in service and useful life to calculate each asset's net book value. Net book value by asset was then adjusted using the Engineering News-Record's Construction Cost Index to identify each asset's reconstruction cost new less depreciation value. Lastly, these assets were classified by each major system function. Schedule 1 in the Appendix of this report presents details of the calculated RCNLD for the County's existing water and sewer systems.

### Credits

The Public Water and Sewer System Development Fee 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 and for assets with outstanding debt liabilities. The credits included in the County's system development fee calculation are discussed below.

#### Contributed and Grant Funded Assets

Water and sewer system assets that were contributed to the County or were funded with grants must be excluded from the system development fee calculation. As the County did not incur the cost of purchasing

and/or constructing the asset, the County cannot legitimately include the costs in the system value used to determine the system development fee.

Furthermore, in partnering with municipal water and sewer service providers within the County so that unincorporated areas can have water and sewer services, the County often advances the cost of total backbone infrastructure. The County then creates a mechanism through which each municipality will pay the County back 75% of those infrastructure costs overtime (through a repayment plan which lasts several years). As such the analysis only includes 25% of any such “shared” infrastructure costs even though some of these repayments are still outstanding.

#### Principal on Outstanding Debt

Once the total system values were identified for each functional component, an adjustment was made in the form of a credit for the principal of all outstanding debt that will be recovered in user fees after new customers connect to the water and/or sewer systems. Upon connection to either system, new customers will pay monthly user rates associated with the use of utility service. In addition to systems operating costs, the user rates recover the principal and interest payments associated with the debt incurred to fund the capital costs of each water and sewer system. Therefore, to avoid a double recovery of those capital costs in the system development fees and user rates, a credit is provided based on the total principal outstanding on debt for each of the water and sewer systems, respectively. Principal outstanding amounts were provided by County staff.

Table 3-1 presents the determination of the County’s net system value given the credits for contributed assets and for debt service as discussed herein.

**Table 3-1 County Net System Values by System**

System	Water	Sewer
<b>Gross System Value</b>	\$25,014,748	\$8,776,252
<b>Principal Outstanding</b>	(\$450,000)	(\$513,712)
<b>Contributions</b>	(\$4,115,282)	(\$563,959)
<b>Grants</b>	(\$7,315,375)	(\$4,036,649)
<b>Net System Value<sup>1</sup></b>	<b>\$13,134,091</b>	<b>\$3,661,932</b>

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<sup>1</sup> Totals may not foot due to rounding.

## 3.2 CATAWBA COUNTY SYSTEM CAPACITY IN ERU

Once the County's net system value was determined, the next step was to determine the County's water and sewer systems' capacities stated in terms of equivalent residential units (ERUs).

### Water Capacity

At the District formation, the County's service area will no longer have any allocation of existing water treatment capacity and treatment throughout the County's service area will be provided by other cities. As such, the SDF Analysis does not include water treatment capacity and therefore does not assume any ERUs related to water treatment. However, the County will continue to provide existing water transmission capacity to both existing and new customers. Therefore, for the water transmission capacity, the SDF Analysis utilized existing linear feet of pipe for the Catawba County's water system as provided by County staff. Existing transmission capacity in terms of ERUs was identified by assuming that any equivalent unit connecting to the water system is on average  $\frac{1}{4}$  acre in size, yielding approximately 104.36 feet of home frontage. In a system where total existing linear frontage is 1,323,898 feet, 12,686<sup>2</sup> ERUs can be served (1,323,898 total linear feet  $\div$  104.36 feet per ERU). Schedule 3 in Appendix of this report presents details of this calculation.

### Sewer Capacity

For the sewer treatment capacity, the SDF Analysis utilized 0.10 million gallons per day based on the County's available maximum month capacity in Henry Fork Wastewater Treatment Plant and assumed a level of service of 180 gallons per day based on standards defined by the North Carolina Department of Environmental Quality and based on discussion with County staff as described below:

On August 9, 2022, the City of Hickory received a residential flow reduction approval from the North Carolina Department of Environmental Quality, which established that a minimum 1- and 2- Bedroom dwelling is equal to 120 gallons per day and that each bedroom above the two bedrooms represents an increase of 60 gallons per day per bedroom. Per discussion with County staff, the analysis assumes that a typical single-family home, an equivalent residential unit (ERU), has 3 bedrooms and therefore assumes both water and wastewater level of service of 180 gallons per day.

For the sewer transmission capacity, the SDF Analysis utilized existing linear feet of pipe for the Catawba County's sewer system as provided by County staff. Existing transmission capacity in terms of ERUs was identified by assuming that any equivalent unit connecting to the sewer system is on average  $\frac{1}{4}$  acre in size, yielding approximately 104.36 feet of home frontage. In a system where total linear frontage is

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<sup>2</sup> Totals may not foot due to rounding. See Schedule 3 of the Appendix for further details.

164,064 feet, 1,572<sup>3</sup> ERUs can be served (164,064 total linear feet ÷ 104.36 feet per ERU). Schedule 3 in the Appendix of this report presents details of this calculation.

Table 3-3 summarizes the system capacity in ERU by function used in the County's fee calculation.

**Table 3-2 System ERU Capacity by Function**

Water Capacity (ERU)			Sewer Capacity (ERU)	
	Source of Supply/ Treatment	Transmission	Transmission	Treatment/ Disposal
<b>Current Capacity</b>	<b>0<sup>1</sup></b>	<b>12,686<sup>2</sup></b>	<b>1,572<sup>3</sup></b>	<b>556<sup>4</sup></b>

<sup>1</sup> No existing treatment capacity is available to the County; Cities provide treatment within the County's service area.

<sup>2</sup> See Schedule 3 in the Appendix for detailed calculation

<sup>3</sup> See Schedule 3 in the Appendix for detailed calculation

<sup>4</sup> County's capacity of Henry Fork Treatment Plant, 100,000 gallons per day, divided by 180 gallons per day (LOS)

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<sup>3</sup> Totals may not foot due to rounding. See Schedule 3 of the Appendix for further details.

## 4. SECC DISTRICT SYSTEM DEVELOPMENT FEE

### 4.1 SECC DISTRICT NET SYSTEM VALUE

As previously, stated, the District's system development fee is based on the incremental method, described in the General Methodology section of this report. As such, only the costs of future capacity in the District's capital improvement program were used in the net system value calculation.

The process used to determine the District's Net System Value, or cost of capacity, for each major system (water and sewer) is summarized below:

- Include the cost of future (incremental) capacity as identified in the District's capital improvement program (CIP).
- Less, or credit back, any projected funding from other sources, not funded by the District (Grants, Developers, etc.).
- Less, or a reduction, in the form of the net present value of the principal on projected future debt to fund future capacity.

As part of this process, the County provided Stantec with a list of the District's water and sewer CIP projects from FY 2025 thru FY 2034 (10-years). Within the provided list of projects, the County also identified expansion (growth) related projects. Only project costs associated with future capacity increase (growth related projects) were used in the calculation of the fee. Lastly, these project costs were classified by each major system function. A detailed listing of projects is provided in Schedule 2 in Appendix of this report.

### Credits

The Public Water and Sewer System Development Fee Act requires that the system development fee calculations include provisions for credits against the value of the system to account for assets that will not be funded by the municipality and for assets which will be debt funded. The credits included in the District's system development fee calculation are discussed below.

#### Funding From Other Sources

Water and sewer growth projects for which contributions are expected, or are to be funded with grants, must be excluded from the system development fee calculation. As the District will not incur the cost of purchasing and/or constructing the asset, the District cannot legitimately include these costs in the net system value used to determine the system development fee. Given that no funding from other outside sources has been identified for growth related projects in the District's CIP, no credit for funding from other sources is included in the District's water or sewer system development fees calculation.

### Principal on Future Debt

Principal on future debt will be recovered in user fees after new customers connect to the water and/or sewer systems. Upon connection to either system, new customers will pay monthly user rates associated with the use of utility service. In addition to systems operating costs, the user rates recover the principal and interest payments associated with the projected future debt to be incurred to fund the growth-related capital costs of each water and sewer system. Therefore, to avoid a double recovery of those capital costs in the system development fees and user rates, a credit is provided based on the net present value of the projected principal payments on future issuances.

The County identified two sewer projects in the District's CIP, which are projected to be debt funded and which equal to a combined amount of \$40M in total projected proceeds. These projects include: 1) Hickory-Catawba Wastewater Treatment Plant Future Expansion (\$15M) and 2) New Wastewater Conveyance (\$25M). As such the analysis applies a debt credit to the District's sewer development fee only. This credit is calculated by first, identifying the projected annual principal payments for each issuance using a 5.00% interest rate and 20-year amortization and then, identifying the net present value of those principal payments for the 10-year period of FY 2027 thru FY 2036 using a discount rate of 5.00%. Thus, the total sewer credit for principal on future debt is \$10.71M.

Because no water projects in the District's CIP were projected to be debt funded, no credit for principal on future water debt was included in the calculation of the water system development fee.

### Additional Credit to Satisfy SDF Act Requirements

When using the incremental approach, the SDF Act requires that "in no case shall the credit be less than twenty-five percent (25%) of aggregate cost of capital improvements." As such in order to meet this minimum requirement, the District's water system development fee includes a total credit of \$3.94M, which represents 25% of the capital improvements of the water system, and the District's sewer system development fee includes a total additional credit of \$1.02M, which reflects the difference between the other calculated credits and the minimum of 25% of the capital improvements of the sewer system.

Table 4-1 presents the determination of the District's net system value given the credit for future debt funding and additional credits to meet the 25% minimum requirements of the SDF Act.

**Table 4-1 District Net System Values and Credits by System**

System	Water	Sewer
<b>Gross System Value</b>	\$15,750,000	\$46,900,000
<b>Principal on Future Debt Credit</b>	\$0	(\$10,708,435)
<b>Contributions</b>	\$0	\$0

<b>Grants</b>	<b>\$0</b>	<b>\$0</b>
<b>Additional Credit to Satisfy SDF Act Requirements</b>	<b>(\$3,937,500)</b>	<b>(\$1,016,655)</b>
<b>Net System Value</b>	<b>\$11,812,500</b>	<b>\$35,175,000</b>

## 4.2 SECC DISTRICT SYSTEM CAPACITY IN ERU

Once the District's net system value was determined, the next step was to determine the District's water and sewer systems' capacities stated in terms of equivalent residential units (ERUs).

### Water Capacity

For the water treatment capacity, the SDF Analysis utilized 3.30 million gallons per day, the incremental capacity included in the District's 10-year CIP, which will be available to new connections. The SDF Analysis also assumed a level of service of 180 gallons per day based on standards defined by the North Carolina Department of Environmental Quality and discussion with County staff as previously described in Section 3.2 of this report.

For the water transmission capacity, the SDF Analysis combined future transmission and future storage capacities included in the District's 10-year CIP. Future transmission capacity in terms of ERU was identified by assuming that any equivalent unit connecting to the water system is on average  $\frac{1}{4}$  acre in size, yielding approximately 104.36 feet of home frontage. In a system where total future (in CIP) linear frontage is 17,000 feet, 163<sup>4</sup> new ERUs can be served ( $17,000 \text{ total linear feet} \div 104.36 \text{ feet per ERU}$ ). Future storage capacity in terms of ERU was identified by utilizing 0.5 MGD of future storage capacity, as provided by County staff, and utilizing the 180 gallons per day level of service as defined by the North Carolina Department of Environmental Quality and discussion with County staff, which equates to future storage capacity of 2,778<sup>5</sup> ERUs.

### Sewer Capacity

For the sewer treatment capacity, The SDF Analysis utilized 1.50 million gallons per day, the incremental capacity included in the District's 10-year CIP, which will be available to new connections within the District service area. The SDF Analysis also assumed a level of service of 180 gallons per day based on standards defined by the North Carolina Department of Environmental Quality and on discussion with County staff.

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<sup>4</sup> Totals may not foot due to rounding. See Schedule 3 of the Appendix for further details.

<sup>5</sup> Totals may not foot due to rounding. See Schedule 3 of the Appendix for further details.



For the sewer transmission capacity, the SDF Analysis utilized the sum of the incremental capacity of the Brown Chapel lift station<sup>6</sup> and the incremental new sewer conveyance capacity, both of which are included in the District's 10-year CIP and will be available to new connections in the District service area. Incremental lift station capacity is equal to 0.27 million gallons per day and new sewer conveyance capacity is equal to 1.20 million gallons per day as provided by County staff. The sum of both equals 1.47 million gallons per day and the analysis again assumes a level of service of 180 gallons per day based on standards defined by the North Carolina Department of Environmental Quality and discussions with County staff.

Table 4-2 summarizes the system capacity in ERU by function used in the District's fee calculation.

**Table 4-2 System ERU Capacity by Function**

Water Capacity (ERU)			Sewer Capacity (ERU)	
	Source of Supply/ Treatment	Transmission	Transmission	Treatment/ Disposal
<b>Incremental Capacity</b>	<b>18,333<sup>1</sup></b>	<b>2,941<sup>2</sup></b>	<b>8,167<sup>3</sup></b>	<b>8,333<sup>4</sup></b>

<sup>1</sup> District's capacity of Hickory Water expansion, 3,300,000 gallons per day divided by 180 gallons per day (LOS)

<sup>2</sup> Combination of incremental water transmission and water storage capacities. See Schedule 3 in the Appendix for detailed calculations.

<sup>3</sup> Combination of incremental Brown Chapel Lift Station and sewer conveyance capacities. See Schedule 3 in Appendix for detailed calculations.

<sup>4</sup> District's capacity of Hickory Catawba Wastewater Plant expansion, 1,500,000 gallons per day divided by 180 gallons per day (LOS)

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<sup>6</sup> Brown Chapel Lift Station is the limiting capacity of the District's lift stations because all other lift stations flow into it.

## 5. RESULTS

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

### 5.1 COUNTY AND SECC DISTRICT CALCULATED SYSTEM DEVELOPMENT FEES

To calculate the system development fees, the net asset value for each entity (County and District) and for each system (water and sewer) was divided by the capacity for each system stated in ERUs described in the prior Sections of this report. Table 5-1 presents the existing and calculated County water and sewer system development fees per ERU and Table 5-2 presents the calculated District water and sewer system development fees per ERU.

**Table 5-1 County System Development Fee Per ERU**

System	Existing	Calculated	Variance
Water	\$1,660	\$1,035	(\$625)
Sewer	\$5,691	\$2,660	(\$3,031)

**Table 5-2 District System Development Fee Per ERU**

System	Existing	Calculated	Variance
Water	n/a	\$2,957	n/a
Sewer	n/a	\$4,280	n/a

It is important to note that the County and the District have 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. Historically, the County has chosen to implement System Development Fees at levels below 100% cost recovery to maintain the affordability of switching from private wells and septic to public water and sewer service.

Once the system development fees per ERU were determined, the system development fees were scaled by meter size based on AWWA flow factors based on 1" meter size. Table 5-3 and Schedule 8 of the Appendix presents County system development fees by meter size. Table 5-4 and Schedule 9 presents District system development fee by meter size.

**Table 5-3 Proposed County Water & Sewer System Development Fees**

Meter Size	AWWA Meter Equivalencies	Water	Sewer
3/4"	1.0	\$1,035	\$2,660

1"	1.0	\$1,035	\$2,660
1 1/2"	2.0	\$2,070	\$5,320
2"	3.2	\$3,312	\$8,512
3"	6.0	\$6,210	\$15,960
4"	10.0	\$10,350	\$26,600
6"	20.0	\$20,700	\$53,200
8"	32.0	\$33,120	\$85,120
10"	46.0	\$47,610	\$122,360
12"	86.0	\$89,010	\$228,760

**Table 5-4 Proposed District Water & Sewer System Development Fees**

Meter Size	AWWA Meter Equivalencies	Water	Sewer
3/4"	1.0	\$2,957	\$4,280
1"	1.0	\$2,957	\$4,280
1 1/2"	2.0	\$5,914	\$8,560
2"	3.2	\$9,462	\$13,696
3"	6.0	\$17,742	\$25,680
4"	10.0	\$29,570	\$42,800
6"	20.0	\$59,140	\$85,600
8"	32.0	\$94,624	\$136,960
10"	46.0	\$136,022	\$196,880
12"	86.0	\$254,302	\$368,080

## 5.2 CONCLUSIONS AND RECOMMENDATIONS

Based upon the analysis presented herein, we have developed the following conclusions and recommendations:

- We recommend that the County and the District adopt the calculated water and sewer system development fees as calculated herein and presented in detail in Schedules 8 and 9 of the Appendix or a level of fee below the maximum calculated herein. This includes the application of water and sewer system development fees based on the size of water meters.
- We recommend that the County and District 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 the most current cost of capacity. Cost of capacity is often

impacted by facilities expansion and changes in technology, demands, development patterns, or other factors which may necessitate additional adjustments to development fees calculated herein.

- We recommend that as part of any system development fee update, the County and the District also evaluates the most appropriate accepted methodology for calculating its system unit cost of capacity as system capacity may change over time.

**Disclaimer**

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*In preparing this report, Stantec utilized information and data obtained from the 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 Existing Asset listing and Functional Allocation of RCNLD
- Schedule 2 Expansion Related Capital Improvement Costs and Functional Allocation
- Schedule 3 Existing & Incremental Transmission, Storage & Conveyance Capacity Calculations
- Schedule 4 Catawba County's Water System Development Fee Calculation – Buy-In Method
- Schedule 5 Catawba County's Sewer System Development Fee Calculation – Buy-In Method
- Schedule 6 SECC District's Water System Development Fee Calculation – Incremental Method
- Schedule 7 SECC District's Sewer System Development Fee Calculation – Incremental Method
- Schedule 8 Catawba County System Development Fees by Meter Size
- Schedule 9 SECC District System Development Fess by Meter Size

# Schedule 1: Existing Asset Listing and Functional Allocation of RCNLD (Reconstruction New Less Depreciation)

## Existing Asset Listing and Functional Allocation of RCNLD (Reconstruction New Less Depreciation)

Ownership	Asset Description	Year Acquired	Original Cost	Accumulated Depreciation	Net Book Value	ENR Escalation Factor	RCNLD	RCNLD Allocation			
								Water System		Sewer System	
								Source of Supply / Treatment	Transmission	Treatment / Disposal	Transmission
County	ADVENT CROSSROADS	2003	\$1,190,742	500,112	\$690,631	2.13	\$1,472,927	\$0	\$1,472,927	\$0	\$0
County	BALLS CREEK ELEMENTARY SCHOOL (GRANT)	2002	\$1,502,579	661,135	\$841,444	2.17	\$1,829,451	\$0	\$0	\$0	\$1,829,451
County	Balls Creek Rd and Buffalo Shoals Rd (Non-NC DOT)	2017	\$980,203	137,228	\$842,975	1.35	\$1,136,125	\$0	\$1,136,125	\$0	\$0
County	Balls Creek Rd and Buffalo Shoals Rd (NC DOT)	2017	\$2,515,324	352,145	\$2,163,179	1.35	\$2,915,441	\$0	\$2,915,441	\$0	\$0
County	BALLS CREEK/BANDYS (43,500 LF)	1996	\$1,038,401	581,505	\$456,896	2.50	\$1,142,830	\$0	\$1,142,830	\$0	\$0
County	BANOAK WATER (37,710 LF)	1996	\$1,432,961	802,458	\$630,503	2.50	\$1,577,070	\$0	\$1,577,070	\$0	\$0
County	BETHANY CH RD/MT OLIVE CH RD (29,000 LF)	1998	\$630,169	327,688	\$302,481	2.41	\$727,716	\$0	\$727,716	\$0	\$0
County	BLACKBURN SCHOOL (HWY 10 SERVICE AREA)	1997	\$485,332	262,079	\$223,253	2.47	\$551,930	\$0	\$551,930	\$0	\$0
County	BLACKBURN SCHOOL (ROUTE 10 SERVICE AREA)	1997	\$378,127	204,189	\$173,938	2.47	\$430,014	\$0	\$430,014	\$0	\$0
County	BLACKBURN-PLATEAU WATER SUPPLY (ARRA GRANT)	2009	\$3,104,862	931,459	\$2,173,403	1.70	\$3,689,884	\$0	\$3,689,884	\$0	\$0
County	BUNKER HILL HIGH SCHOOL	1997	\$375,000	202,500	\$172,500	2.47	\$426,458	\$0	\$426,458	\$0	\$0
County	BUNKER HILL HIGH SCHOOL SEWER (GRANT)	2006	\$2,314,142	833,091	\$1,481,051	1.90	\$2,815,511	\$0	\$0	\$0	\$2,815,511
County	BUNKERHILL COVERED BRIDGE	2013	\$322,987	71,057	\$251,930	1.49	\$375,706	\$0	\$375,706	\$0	\$0
County	CLARKS CREEK WATER (GRANT)	2003	\$100,000	42,000	\$58,000	2.13	\$123,698	\$0	\$123,698	\$0	\$0
County	CLARKS CREEK SEWER	2004	\$120,000	48,000	\$72,000	2.07	\$148,955	\$0	\$0	\$0	\$148,955
County	CLARKS CREEK/CANSLER CROSSROADS (WEST MAIDEN RD)	1998	\$417,020	216,850	\$200,170	2.41	\$481,572	\$0	\$240,786	\$0	\$240,786
County	COLONIAL HEIGHTS SEWER	1993	\$354,518	219,801	\$134,717	2.80	\$376,864	\$0	\$0	\$0	\$376,864
County	DAVIS RD WATER	2016	\$841,783	134,685	\$707,098	1.38	\$975,288	\$0	\$975,288	\$0	\$0
County	EAST MAIDEN ROAD WATER (GRANT)	2001	\$1,328,350	611,041	\$717,309	2.23	\$1,601,167	\$0	\$1,601,167	\$0	\$0
County	EASTWAY (3,700 LF)	1995	\$68,506	39,733	\$28,773	2.60	\$74,692	\$0	\$74,692	\$0	\$0
County	FARMFIELD ACRES (4,469 LF)	2019	\$347,980	34,798	\$313,182	1.26	\$394,544	\$0	\$394,544	\$0	\$0
County	GREGORY WOODS WATER (CDBG)	2004	\$151,170	60,468	\$90,702	2.07	\$187,646	\$0	\$187,646	\$0	\$0
County	GREGORY WOODS SEWER (EDA GRANT)	2004	\$1,100,000	440,000	\$660,000	2.07	\$1,365,420	\$0	\$0	\$0	\$1,365,420
County	HEATHERBROOK SUBDIVISION	2010	\$325,000	91,000	\$234,000	1.63	\$380,878	\$0	\$380,878	\$0	\$0
County	HOPE ROAD WATER (4,500 LF)	2020	\$468,550	37,484	\$431,066	1.22	\$526,921	\$0	\$526,921	\$0	\$0
County	HOSPICE FACILITY (Robinson Rd)	1999	\$20,991	10,496	\$10,496	2.32	\$24,371	\$0	\$24,371	\$0	\$0
County	JAMESTOWN SUBDIVISION	2000	\$489,468	234,945	\$254,523	2.28	\$581,491	\$0	\$581,491	\$0	\$0
County	JARRETT FARM / MCKAY RD SEWER	1994	\$246,307	147,784	\$98,523	2.71	\$267,334	\$0	\$0	\$0	\$267,334
County	JIM BEARD/ROBINETTE/MOCKINGBIRD (CARDINAL ESTATES)	2010	\$72,306	20,246	\$52,060	1.63	\$84,738	\$0	\$84,738	\$0	\$0
County	KEISLER DAIRY RD WATER	2001	\$503,596	231,654	\$271,942	2.23	\$607,025	\$0	\$607,025	\$0	\$0
County	LEELAND TERRACE SUBDIVISION WATER	2009	\$87,726	26,318	\$61,408	1.70	\$104,255	\$0	\$104,255	\$0	\$0
County	LONG CREEK SEWER I & II	1988	\$498,232	358,727	\$139,505	3.15	\$439,333	\$0	\$0	\$0	\$439,333
County	MT. GROVE SHILOH RD WATER (GRANT)	2000	\$1,069,304	513,266	\$556,038	2.28	\$1,270,339	\$0	\$1,270,339	\$0	\$0
County	MULL CREEK SEWER & EXT.	1983	\$463,213	379,835	\$83,378	3.83	\$319,030	\$0	\$0	\$0	\$319,030
County	NEWTON WASTEWATER CAPACITY (Clarks Creek Plant)	2004	\$68,750	27,500	\$41,250	2.07	\$85,339	\$0	\$0	\$85,339	\$0
County	NORTH CATAWBA MIDDLE SCHOOL aka River Bend Middle	1998	\$17,540	9,121	\$8,419	2.41	\$20,255	\$0	\$20,255	\$0	\$0
County	OLD SHELBY ROAD WATER (GRANT) 8,224 LF	2013	\$750,252	165,055	\$585,197	1.49	\$872,710	\$0	\$872,710	\$0	\$0
County	OXFORD ELEMENTARY SCHOOL SEWER (part of Bunker Hill Sewer p	2006	\$316,860	114,070	\$202,790	1.90	\$385,509	\$0	\$0	\$0	\$385,509
County	OXFORD SCHOOL ROAD EXTENSION (PPI)	1999	\$348,867	174,434	\$174,434	2.32	\$405,037	\$0	\$405,037	\$0	\$0

# Schedule 1: Existing Asset Listing and Functional Allocation of RCNLD (Reconstruction New Less Depreciation)

## Existing Asset Listing and Functional Allocation of RCNLD (Reconstruction New Less Depreciation)

Ownership	Asset Description	Year Acquired	Original Cost	Accumulated Depreciation	Net Book Value	ENR Escalation Factor	RCNLD	RCNLD Allocation			
								Water System		Sewer System	
								Source of Supply / Treatment	Transmission	Treatment / Disposal	Transmission
County	RAMSEUR RD WATER	2013	\$89,243	19,633	\$69,610	1.49	\$103,809	\$0	\$103,809	\$0	\$0
County	REMINGTON DRIVE WATER	2009	\$28,737	8,621	\$20,116	1.70	\$34,152	\$0	\$34,152	\$0	\$0
County	ROYAL HEIGHTS WATER (GRANT)	2010	\$316,255	88,551	\$227,704	1.63	\$370,630	\$0	\$370,630	\$0	\$0
County	SECC INTERCONNECT (Boggs Rd)	2002	\$539,627	237,436	\$302,191	2.17	\$657,018	\$0	\$657,018	\$0	\$0
County	ST. JAMES (430 LF)	2017	\$122,488	17,148	\$105,339	1.35	\$141,972	\$0	\$141,972	\$0	\$0
County	SIGMON DAIRY RD WATER	1991	\$306,316	202,168	\$104,147	2.93	\$305,242	\$0	\$305,242	\$0	\$0
County	STARTOWN SCHOOL PUMP STATION	2003	\$82,790	34,772	\$48,018	2.13	\$102,410	\$0	\$0	\$0	\$102,410
County	SWINGING BRIDGE ROAD (4,150 lf)	1996	\$75,000	42,000	\$33,000	2.50	\$82,543	\$0	\$82,543	\$0	\$0
County	TUTTLE MIDDLE SCHOOL/WATER PLANT RD	1997	\$349,483	188,721	\$160,762	2.47	\$397,440	\$0	\$397,440	\$0	\$0
County	WALNUT CREEK/STARTOWN SEWERLINE	1995	\$185,000	107,300	\$77,700	2.60	\$201,705	\$0	\$0	\$0	\$201,705
County	WASTE WATER CAPACITY	2004	\$160,000	64,000	\$96,000	2.07	\$198,607	\$0	\$0	\$198,607	\$0
District	BEATTY RD (Anchors Landing)	2000	\$29,275	14,052	\$15,223	2.28	\$34,779	\$0	\$34,779	\$0	\$0
District	DUKE ENERGY WATER (1,390 LF)	2018	\$510,300	61,236	\$449,064	1.31	\$587,495	\$0	\$587,495	\$0	\$0
District	EAST MAIDEN RD / HWY 150 GRAVITY SEWER (GRANT)	2024	\$1,027,694	0	\$1,027,694	1.00	\$1,027,694	\$0	\$0	\$0	\$1,027,694
District	HICKORY-CATAWBA WWTP EXPANSION	2010	\$5,920,154	0	\$5,920,154	1.63	\$9,636,151	\$0	\$0	\$9,636,151	\$0
District	HIGHWAY 150 SEWER (PHASE I)	2000	\$7,898,568	3,791,313	\$4,107,255	2.28	\$9,383,540	\$0	\$0	\$0	\$9,383,540
District	HIGHWAY 150 SEWER (PHASES II & III)	2000	\$1,842,624	884,460	\$958,164	2.28	\$2,189,047	\$0	\$0	\$0	\$2,189,047
District	HWY 16 SOUTH UTILITIES	2023	\$1,691,002	33,820	\$1,657,182	1.01	\$1,678,010	\$0	\$1,678,010	\$0	\$0
District	ISLAND POINT ROAD (Northview Harbour)	2000	\$149,325	71,676	\$77,649	2.28	\$177,399	\$0	\$177,399	\$0	\$0
District	MOLLYS BACKBONE RD/LYNMORE DR (White Dove)	2000	\$48,991	23,516	\$25,475	2.28	\$58,202	\$0	\$58,202	\$0	\$0
District	SECC WASTEWATER COLLECTION SYSTEM (Northern Section)	2011	\$8,057,620	2,094,981	\$5,962,639	1.58	\$9,410,674	\$0	\$0	\$0	\$9,410,674
District	SECC WATER SUPPLY LOOP PHASE I (Hwy 150)	2004	\$2,771,854	1,108,742	\$1,663,112	2.07	\$3,440,677	\$0	\$3,440,677	\$0	\$0
District	SECC WATER SUPPLY LOOP PHASE II AND III	2015	\$10,549,393	1,898,891	\$8,650,502	1.42	\$12,256,228	\$0	\$12,256,228	\$0	\$0
District	SHERRILLS FORD SCHOOL Water	2001	\$1,557,077	716,255	\$840,822	2.23	\$1,876,871	\$0	\$1,876,871	\$0	\$0
District	WATER CAPACITY	2004	\$1,763,424	0	\$1,763,424	2.07	\$3,648,205	\$3,648,205	\$0	\$0	\$0
Subtotal Fixed Assets			\$72,919,359	\$21,965,248	\$50,954,111		\$89,195,971	\$3,648,205	\$45,124,408	\$9,920,096	\$30,503,262
Allocation of Indirect / Admin Costs								\$0	\$0	\$0	\$0
Total Allocated RCNLD (Reconstruction New Less Depreciation) Costs								\$3,648,205	\$45,124,408	\$9,920,096	\$30,503,262



## Schedule 2: Expansion Related Capital Improvement Costs and Functional Allocation

### Expansion Related Capital Improvement Costs and Functional Allocation

Ownership	Project Name	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2034	Total Costs	% Growth	RCNLD Allocation			
														Water System		Sewer System	
														Source of Supply / Treatment	Transmission	Treatment / Disposal	Transmission
SECC Sewer Projects																	
District	Brown Chapel Rd. & Mollys Backbone Rd. Ls Upgrades (3Rd Pumps, Valves, Elect)	\$2,000,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000,000	100.0%	\$0	\$0	\$0	\$2,000,000
District	Hickory-Catawba Wwtp Future Expansion	\$250,000	\$250,000	\$2,000,000	\$2,000,000	\$7,250,000	\$3,250,000	\$0	\$0	\$0	\$0	\$15,000,000	100.0%	\$0	\$0	\$15,000,000	\$0
District	Lake Norman Marina Ls Upgrade (Impellers)	\$0	\$0	\$0	\$700,000	\$0	\$0	\$0	\$0	\$0	\$0	\$700,000	100.0%	\$0	\$0	\$0	\$700,000
District	New Wastewater Conveyance Village Center & Sherrills Ford Ls Upgrades (Pumps, Elect, Wet Well, Etc.) Per/Design/Construction	\$0	\$0	\$0	\$0	\$25,000,000	\$0	\$0	\$0	\$0	\$0	\$25,000,000	100.0%	\$0	\$0	\$0	\$25,000,000
District		\$0	\$4,200,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,200,000	100.0%	\$0	\$0	\$0	\$4,200,000
SECC Water Projects																	
District	Additional 0.50 Mg Water Storage Tank On Anderson Mtn. (\$8/Gallon) Construction FY35	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$1,750,000	\$4,000,000	100.0%	\$0	\$4,000,000	\$0	\$0
District	Buffalo Shoals Rd. Water (Construction).	\$2,250,000	\$2,250,000	\$2,300,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,800,000	100.0%	\$0	\$6,800,000	\$0	\$0
District	Lincoln County Emergency Water Interconnect	\$0	\$1,000,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,000,000	0.0%	\$0	\$0	\$0	\$0
District	New Booster Pump Station For Sf Rd & Hwy 150	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	100.0%	\$0	\$0	\$0	\$0
District	Water Treatment Capacity Purchase (3.3Mgd @ \$1.50/Gal. \$4,950,000)	\$464,000	\$464,000	\$464,000	\$464,000	\$464,000	\$464,000	\$464,000	\$464,000	\$464,500	\$773,500	\$4,950,000	100.0%	\$4,950,000	\$0	\$0	\$0
Subtotal Fixed Assets														\$4,950,000	\$10,800,000	\$15,000,000	\$31,900,000
Allocation of Indirect / Admin Costs														\$0	\$0	\$0	\$0
														\$4,950,000	\$10,800,000	\$15,000,000	\$31,900,000

## Schedule 3: Existing & Incremental Transmission, Storage & Conveyance Capacity Calculations

### Existing & Incremental Transmission, Storage & Conveyance Capacity Calculations

#### Catawba County's Water Transmission Capacity

	Existing Capacity
(1) Total water lines in water system (linear feet)	661,949
(2) Total line frontage (both sides of the lines) - Line (1) x 2	1,323,898
(3) Size of average single family lot size (in acres)	0.25
(4) Conversion of acres to square feet	43,560
(5) Size of average single family lot size (in square feet) - Line (3) x Line (4)	10,890
(6) Estimated frontage of a single family lot size - Square Root of Line (5)	104.36
<b>(7) Estimated transmission capacity in number of possible connections - Line (2) ÷ Line (6)</b>	<b>12,686.46</b>

#### SECC District's Water Transmission Capacity

	Incremental Capacity
(1) Total water lines in water system (linear feet)	17,000
(2) Total line frontage (one side of the lines) - Line (1)*	17,000
(3) Size of average single family lot size (in acres)	0.25
(4) Conversion of acres to square feet	43,560
(5) Size of average single family lot size (in square feet) - Line (3) x Line (4)	10,890
(6) Estimated frontage of a single family lot size - Square Root of Line (5)	104.36
<b>(7) Estimated transmission capacity in number of possible connections - Line (2) ÷ Line (6)</b>	<b>162.91</b>

\*Service area only allows for use of one side of the line, as such only one side is included in calculation.

#### SECC District's Water Storage Capacity

	Incremental Capacity
(1) Storage Capacity (MGD)	0.50
(2) Storage Capacity (gpd) - Line (1) x 1,000,000	500,000
(3) Level of Service (gpd)	180.00
<b>(7) Estimated Total Storage Capacity - Line (2) ÷ (3)</b>	<b>2,777.78</b>

#### Catawba County's Sewer Transmission Capacity

	Existing Capacity
(1) Total Sewer lines in Sewer system (linear feet)	82,032
(2) Total line frontage (both sides of the lines) - Line (1) x 2	164,064
(3) Size of average single family lot size (in acres)	0.25
(4) Conversion of acres to square feet	43,560
(5) Size of average single family lot size (in square feet) - Line (3) x Line (4)	10,890
(6) Estimated frontage of a single family lot size - Square Root of Line (5)	104.36
<b>(7) Estimated transmission capacity in number of possible connections - Line (2) ÷ Line (6)</b>	<b>1,572.17</b>

#### SECC District's Brown Chapel Lift Station Capacity \*\*

	Incremental Capacity
(1) Brown Chapel Lift Station Capacity (MGD)	0.27
(2) Brown Chapel Lift Station Capacity (gpd) - Line (1) x 1,000,000	270,000
(3) Level of Service (gpd)	180.00
<b>(7) Estimated Total Brown Chapel Lift Station Capacity - Line (2) ÷ (3)</b>	<b>1,500.00</b>

\*Brown Chapel Lift Station is the limiting capacity of District's lift stations because all other lift stations flow into it.

#### SECC District's Sewer Conveyance Capacity

	Incremental Capacity
(1) Conveyance Capacity (MGD)	1.20
(2) Conveyance Capacity (gpd) - Line (1) x 1,000,000	1,200,000
(3) Level of Service (gpd)	180.00
<b>(7) Estimated Total Conveyance Capacity - Line (2) ÷ (3)</b>	<b>6,666.67</b>

## Schedule 4: Catawba County Water System Development Fee Calculation – Buy-In Method

### Catawba County Water System Development Fee Calculation - Buy-In Method

Functional Component:	Source of Supply / Treatment	Transmission	Total
Gross Plant in Service Value	\$ -	\$ 25,014,748	\$ 25,014,748
Gross System Value	\$ -	\$ 25,014,748	\$ 25,014,748
<b>Less:</b>			
Principal Credit	-	(\$450,000)	(450,000)
Specific Asset Contributions/Exclusions	-	-	-
General Allowance for Asset Contributions/Exclusions*	-	(\$4,115,282)	(4,115,282)
Grants**	-	(7,315,375)	(7,315,375)
<b>Net System Value</b>	<b>\$ -</b>	<b>\$ 13,134,091</b>	<b>\$ 13,134,091</b>
<i>Fee Calculation:</i>			
Capacity***			
Million Gallons Per Day (MGD)			
Level of Service (gpd)			
Equivalent Residential Units		12,686	
Initial Capacity Cost per ERU	\$ -	\$ 1,035	\$ 1,035
Percentage of Full Cost Recovery			100.00%
Escalation Factor to Effective Year			0.00%
<b>Calculated Fee per ERU</b>	<b>\$ -</b>	<b>\$ 1,035</b>	<b>\$ 1,035</b>
Current Fee per ERU	-	-	1,660
Dollar Change			\$ (625)
Percent Change			-38%

\*Excludes any portion of assets paid for by other Cities through the County's loan funding program.

\*\*Excludes any assets contributed by developers, funded with grants or otherwise not funded by the County.

\*\*\* See report Section 3 and Schedule 3 of Appendix for additional information.

## Schedule 5: Catawba County Sewer System Development Fee Calculation – Buy-In Method

### Catawba County Sewer System Development Fee Calculation - Buy-In Method

Functional Component:	Treatment / Disposal	Transmission	Total
Gross Plant in Service Value	\$ 283,945	\$ 8,492,307	\$ 8,776,252
Gross System Value	\$ 283,945	\$ 8,492,307	\$ 8,776,252
<b>Less:</b>			
Principal Credit	-	(\$513,712)	(513,712)
Specific Asset Contributions/Exclusions	-	-	-
General Allowance for Asset Contributions/Exclusions*	-	(563,959)	(563,959)
Grants**	-	(4,036,649)	(4,036,649)
<b>Net System Value</b>	<b>\$ 283,945</b>	<b>\$ 3,377,986</b>	<b>\$ 3,661,932</b>
<i>Fee Calculation:</i>			
Capacity***			
Million Gallons Per Day (MGD)	0.10		
Level of Service (gpd)	180		
Equivalent Residential Units	556	1,572	
Initial Capacity Cost per ERU	\$ 511	\$ 2,149	\$ 2,660
Percentage of Full Cost Recovery			100.00%
Escalation Factor to Effective Year			0.00%
<b>Calculated Fee per ERU</b>	<b>\$ 511</b>	<b>\$ 2,149</b>	<b>\$ 2,660</b>
Current Fee per ERU	-	-	5,691
Dollar Change			\$ (3,031)
Percent Change			-53%

\*Excludes any portion of assets paid for by other Cities through the County's loan funding program.

\*\*Excludes any assets contributed by developers, funded with grants or otherwise not funded by the County.

\*\*\* See report Section 3 and Schedule 3 of Appendix for additional information.

## Schedule 6: SECC District Water System Development Fee Calculation – Incremental Method

### SECC District Water System Development Fee Calculation - Incremental Method

Functional Component:	Source of Supply / Treatment	Transmission	Total
Capital Improvement Cost	\$ 4,950,000	\$ 10,800,000	\$ 15,750,000
Total Expansion Capital	\$ 4,950,000	\$ 10,800,000	\$ 15,750,000
Less:			
Revenue Credit (Principal of Future Debt during Planning Period)	-	-	-
Grants	-	-	-
Additional credit to meet 25% requirement*	(1,237,500)	(2,700,000)	(3,937,500)
<b>Net System Value</b>	<b>\$ 3,712,500</b>	<b>\$ 8,100,000</b>	<b>\$ 11,812,500</b>
Revenue Credit % Used in Fee Calculation			25.0%
<i>Fee Calculation:</i>			
Capacity**			
Million Gallons Per Day (MGD)	3.30		
Level of Service (gpd)	180		
Equivalent Residential Units	18,333	2,941	
Initial Capacity Cost per ERU	\$ 203	\$ 2,754	\$ 2,957
Percentage of Full Cost Recovery			100.00%
Escalation Factor to Effective Year			0.00%
<b>Calculated Fee per ERU</b>	<b>\$ 203</b>	<b>\$ 2,754</b>	<b>\$ 2,957</b>
Current Fee per ERU			
Change			\$ 2,957
Percent Change			n/a

\*See credits discussion in report Section 4 for additional information.

\*\*See report Section 4 and Schedule 3 of Appendix for additional information.

## Schedule 7: SECC District Sewer System Development Fee Calculation – Incremental Method

### SECC District Sewer System Development Fee Calculation - Incremental Method

Functional Component:	Treatment / Disposal	Transmission	Total
Capital Improvement Cost	\$ 15,000,000	\$ 31,900,000	\$ 46,900,000
Total Expansion Capital	\$ 15,000,000	\$ 31,900,000	\$ 46,900,000
Less:			
Revenue Credit (Principal of Future Debt during Planning Period)	(3,424,844)	(7,283,501)	(10,708,345)
Grants	-	-	-
Additional credit to meet 25% requirement*	(325,156)	(691,499)	(1,016,655)
<b>Net System Value</b>	<b>\$ 11,250,000</b>	<b>\$ 23,925,000</b>	<b>\$ 35,175,000</b>
<i>Fee Calculation:</i>			
Capacity**			
Million Gallons Per Day (MGD)	1.50	1.47	
Level of Service (gpd)	180	180	
Equivalent Residential Units	8,333	8,167	
Initial Capacity Cost per ERU	\$ 1,350	\$ 2,930	\$ 4,280
Percentage of Full Cost Recovery			100.00%
Escalation Factor to Effective Year			0.00%
<b>Calculated Fee per ERU</b>	<b>\$ 1,350</b>	<b>\$ 2,930</b>	<b>\$ 4,280</b>
Current Fee per ERU			
Change			\$ 4,280
Percent Change			n/a

\*See credits discussion in report Section 4 for additional information.

\*\*See report Section 4 and Schedule 3 of Appendix for additional information.

## Schedule 8: Catawba County System Development Fees by Meter Size

### Catawba County System Development Fees by Meter Size

#### Water Buy-In Approach

Meter Size	AWWA Meter Equivalents (Based on 1")	Calculated System Development Fee
3/4"	1.00	\$1,035
1"	1.00	\$1,035
1.5"	2.00	\$2,070
2"	3.20	\$3,312
3"	6.00	\$6,210
4"	10.00	\$10,350
6"	20.00	\$20,700
8"	32.00	\$33,120
10"	46.00	\$47,610
12"	86.00	\$89,010

#### Sewer Buy-In Approach

Meter Size	AWWA Meter Equivalents (Based on 1")	Calculated System Development Fee
3/4"	1.00	\$2,660
1"	1.00	\$2,660
1.5"	2.00	\$5,320
2"	3.20	\$8,512
3"	6.00	\$15,960
4"	10.00	\$26,600
6"	20.00	\$53,200
8"	32.00	\$85,120
10"	46.00	\$122,360
12"	86.00	\$228,760

#### Water & Sewer Combined

Meter Size	Calculated System Development Fee
3/4"	\$3,695
1"	\$3,695
1.5"	\$7,390
2"	\$11,824
3"	\$22,170
4"	\$36,950
6"	\$73,900
8"	\$118,240
10"	\$169,970
12"	\$317,770

## Schedule 9: SECC District System Development Fees by Meter Size

### SECC District System Development Fees by Meter Size

#### Water Incremental Approach

Meter Size	AWWA Meter Equivalents (Based on 1")	Calculated System Development Fee
3/4"	1.00	\$2,957
1"	1.00	\$2,957
1.5"	2.00	\$5,914
2"	3.20	\$9,462
3"	6.00	\$17,742
4"	10.00	\$29,570
6"	20.00	\$59,140
8"	32.00	\$94,624
10"	46.00	\$136,022
12"	86.00	\$254,302

#### Sewer Incremental Approach

Meter Size	AWWA Meter Equivalents (Based on 1")	Calculated System Development Fee
3/4"	1.00	\$4,280
1"	1.00	\$4,280
1.5"	2.00	\$8,560
2"	3.20	\$13,696
3"	6.00	\$25,680
4"	10.00	\$42,800
6"	20.00	\$85,600
8"	32.00	\$136,960
10"	46.00	\$196,880
12"	86.00	\$368,080

#### Water & Sewer Combined

Meter Size	Calculated System Development Fee
3/4"	\$7,237
1"	\$7,237
1.5"	\$14,474
2"	\$23,158
3"	\$43,422
4"	\$72,370
6"	\$144,740
8"	\$231,584
10"	\$332,902
12"	\$622,382