

City of Kannapolis, NC

Report

Water & Sewer System Development Fee Study



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Executive Summary

Introduction

The City of Kannapolis (the “City”) retained Willdan Financial Services (Willdan) to conduct a water and sewer System Development Fee (SDF) study. The primary objective of this study was to update the water and sewer SDFs to reflect the cost of providing service to new or expanded development within the City. The analysis developed herein calculates a cost-based capacity-related charge for new customers connecting to, or requesting additional capacity in, the City’s water and/or sewer utility system. This Report details the assumptions, methodologies, and calculations upon which the SDFs are developed. As documented in this Report, the calculated fees are equitable and represent the proportionate share of capital costs from which new development will directly benefit.

General

System Development Fees (SDF or SDFs) and other comparable charges are often referred to by various terms including impact fees, capacity fees, system expansion fees, availability fees, connection fees, capacity reservation charges, facility fees, capital connection charges or other such terminology. According to N.C.G.S. 162A-201(9) (2023), an SDF is a one-time charge imposed with respect to new development to fund costs of capital improvements necessitated by the development, to recoup costs of existing facilities which serve the new development, and to recoup costs to purchase capacity in the facilities of other local governments. Such capital costs include the construction of facilities as well as engineering, surveys, land, financing, professional fees, and administrative costs. It has become customary practice for water and sewer utility systems to implement SDFs (or other similar charges) to establish a source of funding for future capital projects. This practice helps to mitigate the need for existing customers to pay for system expansions entirely through increased user rates.

The objective of the SDF study was to calculate a cost-based fee for new customers connecting to, or requesting additional capacity to, the City’s water and sewer utility systems. By establishing a cost-based SDF, the City is attempting to have new customers pay their equitable share of the system, so that new growth pays its way, and doesn’t negatively impact existing customers.

Use of System Development Fee Revenues

Revenue from the SDFs for water and sewer facilities can be used to reimburse the City for prior infrastructure investments and to fund planned future capital projects.

The study is based on the best available information at the time of the report; however, the City cannot predict with certainty how and when development within the City will occur during the planning horizon assumed in this study, the City may need to update and revise the project lists funded by the fees documented in this study. Any substitute projects should be funded within the same system, and the substitute projects must still benefit and have a relationship to new development. The City could identify any changes to the projects funded by the fees when it updates the capital improvement plan (CIP). The fees could also be updated if significant changes to the projects funded by the fees are anticipated.

System Development Fee Summary

Both the water and sewer SDFs are based on the **combined cost** methodology since existing infrastructure has sufficient capacity to serve near-term future development but additional infrastructure is needed to add capacity to serve long-term development. The approaches used to determine the fees are discussed in detail in **Section 1.3** of the report.

The calculated water and sewer SDFs are provided in **Table 1**.

Table 1 – Calculated Water and Sewer SDFs

Description	Meter Factor ^[1]	Water System Development Fee	Sewer System Development Fee	WSACC ^[2]	Total
Meter Size:					
5/8 Inch	1.00	\$ 3,300	\$ 2,600	\$ 2,968	\$ 8,868
3/4 Inch	1.00	\$ 3,300	\$ 2,600	\$ 2,968	\$ 8,868
1.0 Inch	2.50	\$ 8,250	\$ 6,500	\$ 4,947	\$ 19,697
1.5 Inch	5.00	\$ 16,500	\$ 13,000	\$ 9,893	\$ 39,393
2.0 Inch	8.00	\$ 26,400	\$ 20,800	\$ 15,829	\$ 63,029
3.0 Inch	15.00	\$ 49,500	\$ 39,000	\$ 31,659	\$ 120,159
4.0 Inch	25.00	\$ 82,500	\$ 65,000	\$ 49,467	\$ 196,967
6.0 Inch	50.00	\$ 165,000	\$ 130,000	\$ 98,933	\$ 393,933
8.0 Inch	80.00	\$ 264,000	\$ 208,000	\$ 158,293	\$ 630,293
10.0 Inch	115.00	\$ 379,500	\$ 299,000	\$ 415,520	\$ 1,094,020

Notes:

[1] The calculated system development fees are based on the calculated fee per ERU as applied to the respective ERU factor. The methodology for incrementing the charges for larger connection sizes is based on standardized demand criteria established by the American Water Works Association (AWWA) and the Water Environment Federation (WEF) pursuant to the size of the water meter. Such factors are commonly applied consistently for both water and sewer fee calculations.

[2] Represents the existing FY2026 System Development Fees applied by WSACC for the recovery of wastewater treatment facility costs. These fees are independent of the City's fees and will be charged in addition to the City's fees. The City of Kannapolis has no involvement in the setting of WSACC's fees and they are provided for informational purposes only.

Section 1 – Introduction

1.1 Criteria for System Development Fees

SDFs are one-time charges that reflect the demands and costs on City facilities created by new development for additional capacity. The purpose of an SDF is to assign, to the practical extent possible, growth-related capital costs to those customers responsible for such additional costs. To the extent that new population growth imposes identifiable additional capital costs to municipal services, equity and prudent financial practice necessitate the assignment of such costs to those customers or system users responsible for the additional costs rather than the existing user base. This practice has been labeled as “growth paying for growth” without placing the full cost burden on existing users.

It is important to note that an SDF is different than an assessment or tax. A special assessment is predicated upon an estimated increment in value to the property assessed by virtue of the improvement being constructed in the vicinity of the property. Further, the assessment must be directly and reasonably related to the benefit of which the property receives. SDFs are not related to the value of the improvement to the property but rather to the usage of the facilities required by the property. Until the property is put to purpose (i.e., developed), there is no burden placed upon the servicing facilities and the land use may be entirely unrelated to the value of the assessment basis of the underlying land. With respect to a comparison to taxes, SDFs are distinguishable primarily in the direct relationship between the amount charged and the measurable quantity of public facilities required. In the case of taxation, there is no requirement that the payment be in proportion to the quantity of public services consumed, and funds received by a municipality from taxes can be expended for any legitimate public purpose.

1.2 Legal Considerations

Court Proceedings - General

Courts throughout the United States have found that capacity-related fees associated with new customer connections to utility systems are legal provided they meet a Rational Nexus Test. In accordance with common court rulings, the rational nexus test requires that certain conditions be met to incorporate a valid capacity-related fee. Typically, the court decisions have found that such fees are valid if the following standards are met:

1. The required payment should primarily benefit those who must pay it because they receive a special benefit or service because of improvements made with the proceeds.
2. Proceeds from the required SDF payments are dedicated solely to the capital improvement projects (i.e., proceeds are not placed in a general fund to be spent on ongoing expenses and maintenance, which characterizes a tax, but are set aside in a restricted reserve fund).

3. The revenue generated by the required payment should not exceed the cost of capital improvements to the system.
4. The required payments are imposed uniformly and equitably on all new customers based on their anticipated usage (i.e., a relationship between the fees paid and the benefits received).

In general, most courts have found that it is reasonable for utility systems to take steps to ensure that there are adequate funds for capital projects, and to set aside collected fees in a special account for that purpose. Additionally, new customers are treated alike in that all must pay a fee based on anticipated usage and/or potential demand. Finally, courts have reasoned that it is rational for a utility system to prepare to pay for future capital projects and, while imposing a capacity-related fee may not be the only way to raise such funds, it is a reasonable and legitimate method of accruing funds.

Court Proceedings – North Carolina

In 1990, a precedent was set in the State of North Carolina in a decision by the United States Court of Appeals, Fourth District for the case of *Shell Island Investment v. Town of Wrightsville Beach North Carolina* (900 F.2d 255), regarding the right of the Town of Wrightsville Beach to impose utility system impact fees to fund the expansion of the water and sewer facilities. The Court of Appeals upheld the decision of the United States District Court for the Eastern District of North Carolina that the Town of Wrightsville Beach had “authority to impose impact and tap fees under the Public Enterprise statute and that no specific enabling legislation is necessary.”

Pursuant to the ruling of the District Court and the Court of Appeals, it was concluded that “despite the absence of any express authorization in the Public Enterprise Statute for municipalities to establish or increase utility fees in order to offset future capital improvements to their sewer and water infrastructures, general authority to do so is implicit in relevant state law, limited only by the requirement that any discrimination among users be not based on arbitrary or unreasonable classifications.”

Court Proceedings – Town of Carthage Case

On April 8, 2016, in the case of *Quality Built Homes, Inc. v. Town of Carthage*, (766 S.E. 2d 897) the North Carolina Court of Appeals held that the Town of Carthage possessed authority to charge “impact fees” for water and sewer services. However, on August 16, 2016, the North Carolina Supreme Court reversed the North Carolina Court of Appeals’ decision and held that the Town did not possess authority to charge impact fees for water and sewer services. Although there were many distinct factors influencing this decision, the result generated a significant amount of confusion and concern for governmental utility systems within the State.

House Bill 436

The General Assembly of North Carolina recently enacted House Bill 436, which included a general statute under Section 1, Chapter 162A, Article 8 for the development of “System Development Fees” (herein referred to as “Chapter 162A”) that impacts all governmental entities in North Carolina who currently assess fees for the recovery of capital costs associated with new development and system growth. As defined in Chapter 162A, a system development fee is 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. Based on requirements of Chapter 162A, the calculation of the SDFs must employ generally accepted accounting, engineering, and planning methodologies. Defined methodologies include the buy-in method, incremental or marginal cost method, and combined cost method. A brief description of each of these methods as defined in American Water Works Association (AWWA) Manual M1 is provided below.

- **Buy-in Method:** Based on the value of the existing system’s capacity. Under this method, new development “buys” a proportionate share of capacity at the cost (value) of the existing facilities.
- **Incremental/Marginal Cost Method:** Based on the value or cost to expand the existing system’s capacity. This method assigns to new development the incremental cost of future system expansion needed to serve new development.
- **Combined Cost Method:** Based on blended value of both the existing and expanded system capacity. This method uses a combination of both the buy-in and incremental/marginal cost methods.

Chapter 162A allows a governmental unit to utilize any of the three methods described above depending on the availability of information from the governmental unit, i.e., a detailed listing of asset data (buy-in method) or a ten to twenty-year capital improvement plan (incremental method). The combined method includes both existing assets and future capital projects required to serve growth.

Chapter 162A states that an SDF shall be calculated based on a written analysis, which may constitute or be included in a capital plan, that:

1. Is prepared by a financial professional or a licensed professional engineer qualified by experience and training or education to employ generally accepted accounting, engineering, and planning methodologies to calculate system development fees for public water and sewer systems.
2. Documents in reasonable detail the facts and data used in the analysis and their sufficiency and reliability.

- 3.** Employs generally accepted accounting, engineering, and planning methodologies, including the buy-in, incremental cost or marginal cost, and combined cost methods for each service, setting forth appropriate analysis as to the consideration and selection of a method appropriate to the circumstances and adapted as necessary to satisfy all requirements of this Article.
- 4.** Documents and demonstrates the reliable application of the methodologies to the facts and data, including all reasoning, analysis, and interim calculations underlying each identifiable component of the system development fee and the aggregate thereof.
- 5.** Identifies all assumptions and limiting conditions affecting the analysis and demonstrates that they do not materially undermine the reliability of conclusions reached.
- 6.** Calculates a final system development fee per service unit of new development and includes an equivalency or conversion table for use in determining the fees applicable for various categories of demand.
- 7.** Covers a planning horizon of not less than 5 years nor more than 20 years.
- 8.** Is adopted by resolution or ordinance of the local governmental unit in accordance with N.C.G.S. 162A-209.
- 9.** Uses the gallons per day per service unit that the local governmental unit applies to its water or sewer system engineering or planning purposes for water or sewer, as appropriate, in calculating the system development fee.
- 10.** Includes any purchased capacity in, or reserved capacity supplied by, capital improvements or facilities owned by another local government unit as part of the local government unit's overall capacity in capital improvements. (2017-138, S. L; 2018-34, s. 1(a); 2021-76, S. 2; S.L. 2023-55, § 2(b), eff. June 23, 2023.)

Further, Chapter 162A includes certain other minimum requirements as follows:

- 1.** A system development fee shall not exceed that calculated based on the system development fee analysis.
- 2.** Credits must be included no matter which methodology is used. A more detailed discussion on the applicable credits will be included in later sections of this Report.
- 3.** A construction or contribution credit shall be given with respect to new development such that the governmental unit will credit the value of costs in excess of a development's proportionate share of connecting facilities required to be oversized for the use of others outside the development.

As such, this Report is intended to assess SDFs that meet the legal requirements set forth above to develop fees in accordance with Chapter 162A. The development of the calculated SDFs and applicable analysis assumptions are described throughout the Report.

1.3 Calculation Methodologies

There are three basic methodologies that are used to calculate the various components of SDFs. The methodologies are used to determine the best measure of demand created by new development for each component of the SDFs. The methodologies can be classified as looking at the past, present, and future capacities of infrastructure. The three basic methodologies are described below:

Buy-In Methodology

The **buy-in** methodology considers infrastructure that has been built in advance of new development and excess capacity is available to serve new development. Under this methodology, new development reimburses the community for previous capacity investments via the SDF. The funds are then available for future expansion of the system. It is important to note that while this methodology is labeled as buy-in, payment of an SDF does not transfer any ownership of the assets to the customer. Rather, such payment provides access to capacity at a status equal to that of existing customers of the system.

Incremental/Marginal Cost Methodology

The **incremental/marginal cost** methodology considers the recovery of future asset costs, where the general concept is to assign to new development the incremental cost of future system expansion needed to serve the new development. When using this methodology, Chapter 162A requires a minimum 5-year and maximum 20-year capital improvements program (CIP) that identifies the costs associated with new capacity and the timing of the expenditures. Only projects that increase system capacity are included in the analysis, while costs associated with maintenance, repair, or replacement of existing facilities are excluded. It is also important to consider the planned funding sources for the projects identified in the CIP. For example, projects that are funded from grants or developer contributions are excluded from the SDF calculation as these are costs that are not incurred by the utility.

Combined (Hybrid) Cost Methodology

The **combined (hybrid) cost** methodology is used when there is available capacity in the existing system, but there are also future improvements that require additional upgrades or expansion to serve new development. This method assumes that the utility has capacity within the existing system sufficient to serve near-term growth but will require additional capacity to meet future growth needs. Using this method, new development pays an SDF that reflects the value of both (1) a proportionate share of the value of existing infrastructure and (2) the cost of future capital improvements necessary to provide additional capacity. This methodology provides a balanced and equitable allocation of costs by recognizing both past and future investments in system capacity.

Table 2 provided a comparison of the three basic SDF methodologies mentioned above.

Table 2 – Comparison of SDF Methodologies

Description	Buy-In Method	Incremental/Marginal Cost Methodology	Combined (Hybrid) Cost Methodology
Facility/Asset Focus	Existing Facilities	Future Growth-Related Capital Assets	Existing Facilities + Future Capital Assets
Best Used When	System has sufficient excess capacity to serve new connections	System is at or near capacity and requires expansion to serve growth	System has available capacity for near-term growth but requires future expansion
Calculation Basis	Replacement Cost New Less Depreciation (RCNLD) of existing facilities	Cost of planned growth-related capital projects	Weighted blend of buy-in and marginal costs
Cost per Gallon of Capacity	Existing recoverable assets / existing capacity	Future capital costs / future growth-related capacity	Combined existing + future facility costs / combined total capacity (existing + future)
Methodology	New users "buy into" the equity of existing facilities and available capacity	New users fund the expansion required to serve their demand	Allocates costs across both existing and future users

1.4 Existing System Development Fees

The City currently imposes SDFs on new customers requiring water and/or sewer utility service. The current fees and fee structure are based on the size of the water meter, are consistent with common industry SDF setting standards, and were developed and adopted in accordance with Chapter 162A requirements. The existing SDFs are provided in **Table 3**.

Table 3 – Existing Water and Sewer SDFs

Description	Water System Development Fee	Sewer System Development Fee	WSACC ^[1]	Total
Meter Size:				
5/8 Inch	\$ 1,350	\$ 1,000	\$ 2,968	\$ 5,318
3/4 Inch	\$ 1,350	\$ 1,000	\$ 2,968	\$ 5,318
1.0 Inch	\$ 3,000	\$ 1,625	\$ 4,947	\$ 9,572
1.5 Inch	\$ 6,000	\$ 3,250	\$ 9,893	\$ 19,143
2.0 Inch	\$ 9,600	\$ 5,200	\$ 15,829	\$ 30,629
3.0 Inch	\$ 18,000	\$ 9,750	\$ 31,659	\$ 59,409
4.0 Inch	\$ 30,000	\$ 16,250	\$ 49,467	\$ 95,717
6.0 Inch	\$ 60,000	\$ 32,500	\$ 98,933	\$ 191,433
8.0 Inch	\$ 96,000	\$ 52,000	\$ 158,293	\$ 306,293
10.0 Inch	\$ 138,000	\$ 74,000	\$ 415,520	\$ 627,520

Notes:

[1] Represents the existing FY2026 System Development Fees applied by WSACC for the recovery of wastewater treatment facility costs. These fees are independent of the City's fees and will be charged in addition to the City's fees. The City of Kannapolis has no involvement in the setting of WSACC's fees and they are provided for informational purposes only.

Section 2 – Recoverable Facility Costs

2.1 Introduction

The analysis developed herein for calculation of the SDFs proposes the **combined cost** methodology as defined previously in **Section 1.3**. The combined cost methodology includes the cost/value of both the existing facilities currently providing service, as well as the planned facilities required to perpetuate or expand service. This methodology assumes that the utility currently has capacity within the existing system sufficient to serve near-term growth but will require additional capacity to meet future growth needs. The information and assumptions that went into the development of the recoverable facility costs resulting in the calculated water and sewer SDFs will be discussed, thoroughly, throughout the remainder of **Section 2**.

2.2 Buy-In System Value

The current value of the City's water and sewer assets were brought forward to present-day dollars using the Handy-Whitman Index of Public Utility Construction Costs for the South Atlantic Region. Using this index attempts to value the City's assets at an amount that represents what it would cost to purchase or construct those assets today. It is important to recognize, however, that these assets are not new and are not being purchased today, but rather have been depreciated over time. Therefore, the accumulated depreciation, which is also adjusted, is subtracted from the present-day value of the assets to determine what is referred to as the Replacement Cost New Less Depreciation (RCNLD) fixed asset value. This results in a replacement cost valuation that reflects the remaining depreciable life of the facilities.

In performing the RCNLD analysis, the City provided a detailed listing of the current water and sewer system facilities (the Asset Listing). The Asset Listing contained the original cost of each asset, along with the date placed in service, and the accumulated depreciation for each asset. The replacement cost of each asset is estimated by using the Handy-Whitman Index of Public Utility Construction Costs for the South Atlantic Region, which is used by regulatory bodies, operating entities, utility systems, service companies, valuation experts, and insurance companies. The Handy-Whitman Index values are widely used to trend earlier valuations and original cost records to estimate replacement costs at prices prevailing at a certain date or at the present. While other construction cost indices are available, the Handy-Whitman Index is used in this analysis because it is specifically tailored to the utility industry.

After the replacement cost is calculated for each individual asset item, the adjusted accumulated depreciation is deducted for each asset item, which results in the RCNLD. A summary of the fixed assets by asset classification is shown in **Table 4**. A full list of the City's fixed assets and applicable recoverable cost allocations can be found in **Appendix A**.

Table 4 – Current Asset Valuation

Description	Original Cost	Replacement Cost New	Accumulated Depreciation	RCNLD
Water Asset Category:				
Buildings	\$ 17,783,798	\$ 42,344,951	\$ (17,197,529)	\$ 25,147,422
CIP Projects	7,508,186	11,577,038	-	11,577,038
Distribution/Collection	74,966,609	266,496,966	(161,666,644)	104,830,322
Infrastructue	18,013,703	27,989,332	(3,191,440)	24,797,892
Land	473,895	473,895	-	473,895
Major Equipment	4,291,831	6,803,904	(5,558,215)	1,245,689
Total Existing Facilities	\$ 123,038,022	\$ 355,686,084	\$ (187,613,827)	\$ 168,072,257
Sewer Asset Category:				
Buildings	\$ 5,639,865	\$ 20,343,894	\$ (18,585,818)	\$ 1,758,076
CIP Projects	4,216,287	6,866,773	-	6,866,773
Distribution/Collection	48,261,318	141,382,222	(69,639,707)	71,742,515
Infrastructue	15,653,739	23,907,067	(2,485,843)	21,421,224
Land	365,171	365,171	-	365,171
Major Equipment	3,523,173	5,603,989	(4,404,632)	1,199,357
Total Existing Facilities	\$ 77,659,553	\$ 198,469,114	\$ (95,115,999)	\$ 103,353,115
Total Assets	\$ 200,697,574	\$ 554,155,198	\$ (282,729,826)	\$ 271,425,372

Since localized distribution and collection facilities are oftentimes contributed by developers or funded by other sources (i.e., assessments and direct customer payments), these facilities are not included for recovery through the SDFs. Also, any assets that were funded through grants are also excluded from the SDF calculation as these are costs that were not incurred by the utility. Additionally, a cost limit or threshold is set as a condition of inclusion of the asset items in the SDF calculation. Based on discussions with City staff, for the purposes of this analysis, the cost threshold is set at \$100,000. The cost threshold assumes that any asset item that costs less than the limit amount is not a major facility that provides a system-wide benefit and is therefore removed from the SDF calculation. A final adjustment is made to exclude certain asset items that were identified as projects that only restored existing capacity rather than provided system upgrades or additional system capacity (e.g., equipment and vehicles). The existing recoverable water and sewer capital costs included in the analysis are summarized in **Table 5**.

Table 5 – Recoverable Existing Facilities

Description	Original Cost	Replacement Cost New	Accumulated Depreciation	RCNLD
Water Asset Category:				
Buildings	\$ 17,675,683	\$ 41,736,724	\$ (16,685,172)	\$ 25,051,552
CIP Projects	7,413,806	11,459,685	-	11,459,685
Distribution/Collection	62,964,036	225,649,027	(139,956,738)	85,692,289
Infrastructue	9,510,376	15,801,015	(1,630,979)	14,170,036
Land	-	-	-	-
Major Equipment	-	-	-	-
Total Existing Facilities	\$ 97,563,900	\$ 294,646,451	\$ (158,272,889)	\$ 136,373,562
Sewer Asset Category:				
Buildings	\$ 5,601,007	\$ 19,852,770	\$ (18,098,443)	\$ 1,754,327
CIP Projects	4,216,287	6,866,773	-	6,866,773
Distribution/Collection	33,482,300	98,082,008	(50,668,455)	47,413,553
Infrastructue	7,149,249	11,710,351	(927,882)	10,782,469
Land	-	-	-	-
Major Equipment	-	-	-	-
Total Existing Facilities	\$ 50,448,843	\$ 136,511,902	\$ (69,694,780)	\$ 66,817,122
Total Recoverable Assets	\$ 148,012,742	\$ 431,158,352	\$ (227,967,668)	\$ 203,190,684

2.3 Incremental/Marginal Cost System Value

The City has developed a Capital Improvement Program (CIP), based on a recently conducted master planning study, that provides a listing of individual projects and anticipated construction costs from fiscal years (FY) 2025/26 through FY 2035/2036. Like the rationale for excluding certain existing assets from recovery through SDFs, the CIP project costs included for capital recovery in the analysis consist of only those projects associated with system-wide upgrades or expansions. As such, projects related to general maintenance (i.e., renewal and replacement of existing facilities) or localized facilities that benefit only certain customers are excluded from recovery through the SDFs. The full CIP included in the SDF analysis and the resulting identification of assumed growth-related projects (i.e., project costs recoverable from SDFs) are provided in **Appendix B**. The projected growth-related projects and capital costs included in the analysis are summarized in **Table 6**.

Table 6 – Summary of the CIP & Recoverable Capital Costs

Description	Water Capital	Sewer Capital	Total
Capital Improvement Program			
Total Capital Projects	\$ 126,417,048	\$ 61,599,391	\$ 188,016,439
Unrecoverable Capital Projects	(53,275,759)	(19,284,963)	(72,560,722)
Total Growth Related Capital Projects	\$ 73,141,289	\$ 42,314,428	\$ 115,455,717

2.4 Recoverable Facility Costs

Since the analysis developed herein for calculation of the SDFs is based upon the **combined cost** methodology. Both existing facilities that are currently providing service (**Section 2.2**), as well as the planned facilities required to perpetuate or expand service (**Section 2.3**) are included in the total recoverable facility costs. The combined system costs included for recovery are summarized in **Table 7**.

Table 7 – Combined Recoverable Facility Costs

Description	Water System	Sewer System	Total
Existing Recoverable Assets			
Buildings	\$ 25,051,552	\$ 1,754,327	\$ 26,805,879
CIP Projects	11,459,685	6,866,773	18,326,458
Distribution/Collection	85,692,289	47,413,553	133,105,842
Infrastructure	14,170,036	10,782,469	24,952,505
Land	-	-	-
Major Equipment	-	-	-
Total Recoverable Existing Facilities	\$ 136,373,562	\$ 66,817,122	\$ 203,190,684
Capital Improvement Program			
Total Capital Projects	\$ 126,417,048	\$ 61,599,391	\$ 188,016,439
Unrecoverable Capital Projects	(53,275,759)	(19,284,963)	(72,560,722)
Total Growth Related Capital Projects	\$ 73,141,289	\$ 42,314,428	\$ 115,455,717
Total Recoverable Facilities	\$ 209,514,851	\$ 109,131,550	\$ 318,646,401

2.5 SDF Credits Applied

It is customary practice for utilities to fund major capital improvements and expansion projects with debt (e.g., bond issues). Typically, debt service payments associated with bond issues are recovered through the monthly user rates and charges applied to all system customers, as well as from other available revenue sources (including SDFs). To mitigate the potential of new customers paying for capital facilities twice (i.e., paying an SDF for facilities that may have been debt funded, and then paying for debt service in their monthly user rates), the SDF analysis developed herein applies a debt service credit against the value of the existing facilities to account for assets with outstanding debt liabilities. The credit on the existing facilities is equal to the outstanding principal remaining on all utility-related debt. The debt service credit amount for the existing facilities is allocated between water and sewer based on information provided by staff related to the capital projects that were funded from proceeds of each individual debt instrument.

In addition to the credit on the existing facilities, the analysis developed herein applies a credit as required by statute to the planned future facilities provided in the CIP. The credit for the future facilities is no less than 25% of the recoverable CIP, which meets the requirements of Chapter 162A. The total debt service and CIP credit amounts are provided in **Table 8**.

Table 8 – SDF Credits Applied to Recoverable Facility Costs

Description	Water System	Sewer System	Total
Debt Service Credit			
Outstanding Principal on Existing Debt	\$ 36,880,966	\$ 23,809,764	\$ 60,690,730
Capital Improvement Program			
Growth-Related 25.00% CIP Adjustment	18,285,322	10,578,607	28,863,929
Total Credits Applied	\$ 55,166,288	\$ 34,388,371	\$ 89,554,659

2.6 Net Recoverable Facilities

Once the recoverable facility costs are developed (**Section 2.4**) along with the SDF credits to be applied to the total recoverable facility costs (**Section 2.5**), the net recoverable facility costs to be recovered from the SDFs can be determined. A summary of the combined recoverable capital facilities as adjusted for the applicable credits is provided in **Table 9**.

Table 9 – Net Recoverable Facility Costs

Description	Water System	Sewer System	Total
Existing Recoverable Assets			
Buildings	\$ 25,051,552	\$ 1,754,327	\$ 26,805,879
CIP Projects	11,459,685	6,866,773	18,326,458
Distribution/Collection	85,692,289	47,413,553	133,105,842
Infrastructure	14,170,036	10,782,469	24,952,505
Land	-	-	-
Major Equipment	-	-	-
Total Recoverable Existing Facilities	\$ 136,373,562	\$ 66,817,122	\$ 203,190,684
Capital Improvement Program			
Total Capital Projects	\$ 126,417,048	\$ 61,599,391	\$ 188,016,439
Unrecoverable Capital Projects	(53,275,759)	(19,284,963)	(72,560,722)
Total Growth Related Capital Projects	\$ 73,141,289	\$ 42,314,428	\$ 115,455,717
Total Recoverable Facilities	\$ 209,514,851	\$ 109,131,550	\$ 318,646,401
Less Credits:			
Outstanding Principal on Existing Debt	\$ (36,880,966)	\$ (23,809,764)	\$ (60,690,730)
Growth-Related 25.00% CIP Adjustment	(18,285,322)	(10,578,607)	(28,863,929)
Total Credits Applied	\$ (55,166,288)	\$ (34,388,371)	\$ (89,554,659)
Total Net Recoverable Facilities	\$ 154,348,563	\$ 74,743,179	\$ 229,091,742

Section 3 – System Capacities

3.1 Introduction

As previously addressed, the purpose of the SDF is to have new customers pay for their proportionate share of system capacity. This concept implies that the fee is based on a unit cost of capacity. To apply a fee based on the unit cost of capacity, it is necessary to identify the capacities of the facilities for which cost recovery is assigned. As such, the methodology applied herein relies upon identifying the existing and anticipated water and sewer facilities capacities. In developing the amount of capacity that each utility system can provide, the analysis relies on information provided by the City, as well as assumptions based on industry standards.

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

As such, it is common to define the capacity for all components (including transmission or conveyance facilities) based on the system's total treatment capacity, as was the approach used herein to determine the maximum capacities of the City's utility systems. The rationale behind this approach is that even if the transmission or conveyance capacities are larger than the maximum treatment capacity, the maximum capacity the system can offer to future connections is based on the total maximum treatment capacity.

3.2 Water System Capacity

The City currently owns and operates a water treatment plant with a maximum day design capacity of 15.000 MGD (million gallons per day). The City also has inter-local water purchase contracts with Salisbury, Albemarle (2.000 MGD) and Concord, although the Salisbury and Concord connections are for emergencies only and therefore have been excluded from available capacity in the fee calculation. Between the treatment plant and the purchase contracts, the City has a total water capacity of 17.000 MGD.

The City is also anticipating adding additional water capacity through planned capital projects as identified in the City's CIP. The City is anticipating adding a total of 4.500 MGD in additional capacity through the Water Treatment Plant Rehab, Phase 2 project (1.000 MGD) and the Summers Walk (0.500 MGD), Davidson Road (1.000 MGD), and Salisbury (2.000 MGD) interconnect projects. Bringing the total max treatment capacity to 21.50 MGD.

An adjustment is then made to the total treatment capacity (21.500 MGD) based on the assumed amount of unaccounted-for water (i.e., system flushing and backwashing, testing, line loss, etc.). The unaccounted-for water reduces the amount of capacity available to existing and future customers. The analysis performed herein assumes an average line-loss factor of 15.0% to adjust for the unaccounted-for water flows at the treatment plant. This adjustment results in an assumed max daily treatment plant capacity of 18.275 MGD (21.500 MGD x 85% capacity adjustment = 18.275 MGD of capacity).

3.3 Sewer System Capacity

The City currently has no wastewater treatment facilities. Rather, as a participating member and wholesale customer, the City discharges its sewer to the Water and Sewer Authority of Cabarrus County (WSACC) for treatment and disposal. As such, in developing the sewer SDFs calculated herein, the analysis only includes the recovery of the City's transmission facilities. WSACC applies its own SDFs to new customers for the recovery of wastewater treatment capacity costs.

Based on information provided by staff, the City currently has an available treatment capacity of 5.981 MGD from WSACC with another 0.950 MGD of capacity anticipated to become available to the City through WSACC's 2027 wastewater treatment plant expansion. The City is also anticipating adding a total of 1.117 MGD in additional capacity through the SRU Kannapolis Crossing LS Improvements project (0.317 MGD) and the Landis-Kannapolis WWTP project (0.800 MGD) identified in the City's CIP. Bringing the total system capacity to 8.048 MGD. The total available and anticipated treatment capacity available is adjusted for an infiltration and inflow (I&I) factor of 6.40%. As with the line loss in the water system, the sewer system is impacted by inflow and infiltration (I&I) into the sewer collection system. In essence, the impact of I&I reduces the level of capacity that is available for use by existing and future system customers. The resulting transmission capacity amount is 7.533 MGD (8.048 MGD x 93.60% capacity adjustment = 7.533 MGD of capacity).

Section 4 – Level of Service per ERU

4.1 Introduction

The analysis developed herein relies upon determining a standard Level of Service (LOS), which is typically defined as an Equivalent Residential Unit (ERU). The standard LOS per ERU forms the basis for applying the unit cost per gallon of capacity, further detailed in **Section 5**, to determine the applicable SDF per ERU. Clearly defined water and sewer LOS standards identify the amount of system capacity required to serve each ERU, which is essential for the determination of SDFs. This ensures that new development pays its proportionate share and promotes transparency in how the SDFs are derived.

4.2 Water System LOS per ERU

For purposes of applying the LOS, an ERU is representative of a single-family residential dwelling unit receiving water service from a 5/8-inch x 3/4-inch metered connection and discharging normal domestic-strength wastewater through a comparably sized sewer connection. Based on industry standards for the development and application of capacity-related charges, a typical residential water connection is widely assumed to require average service availability in the range of 350 to 450 gallons per day (gpd) of system capacity. The State of North Carolina (the State) has established flow standards for purposes of planning and engineering design. In accordance with daily water flow capacity design standards defined in the North Carolina Administrative Codes (15A NCAC 18C .0409), the LOS requirement for a residential connection is 400 gpd. In accordance with the City's existing planning methodology, it is assumed that one ERU requires a standard LOS of 400 gpd of water system capacity.

4.3 Sewer System LOS Development per ERU

Like the water system, the SDFs for sewer service are to be applied on an ERU basis such that one ERU is equal to the estimated capacity requirements for a typical single family residential customer receiving water service from a 5/8-inch x 3/4-inch metered connection and discharging normal domestic-strength wastewater through a comparably sized sewer connection. In accordance with the City's existing planning methodology, it is assumed that one ERU requires a standard LOS of 263 gpd of sewer system capacity. The City's LOS is consistent with wastewater flow design standards adopted by the State and defined by the North Carolina Administrative Codes (15A NCAC 02T .0114). While the LOS requirement provided in the State Codes is based on 120 gallons of capacity per day per bedroom for a residential home, the City is using a LOS of 75 gallons of capacity per day per bedroom for a residential home. Assuming an average of 3.5 bedrooms per new home constructed, applying the City's flow standard results in one ERU requiring a standard LOS of 263 gpd (75 gpd per bedroom x 3.5 bedrooms = 263 gpd per ERU) of sewer system capacity.

Since the City is currently experiencing an increase in bedrooms per home being built, it is assumed that the average household will have 3.5 bedrooms. Based on discussions with City staff, an average household of 3.5 bedrooms better reflects the mixture of residential construction currently being seen by the City and they expect the building of larger homes to continue in the future.

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Section 5 – System Development Fee Results

5.1 Development of SDFs

The methodology utilized herein for developing the water and wastewater SDFs relies upon the cost of existing and planned major system facilities as well as the existing and expanded system capacities to calculate an estimated cost per unit (gallon) of capacity. Based on this methodology, it is estimated that the water facility costs \$8.45 per gallon of water capacity. Additionally, it is estimated that the sewer facility costs \$9.92 per gallon of sewer capacity. The calculated costs per gallon of capacity are summarized in **Table 10**.

Table 10 – Cost per Gallon of Capacity

Description	Water System	Sewer System
Total Net Recoverable Facilities	\$ 154,348,563	\$ 74,743,179
Estimated Capacity (MGD)	18.275	7.533
Cost per Gallon of Capacity	\$ 8.45	\$ 9.92

Applying the standard LOS amounts, previously identified in **Section 4** of the Report, to the estimated unit costs per gallon of capacity results in the calculated water and sewer SDFs of \$3,300 and \$2,600, respectively, as rounded down to the nearest hundred, for a typical single-family residential connection (i.e., per ERU). A summary of how the water and sewer SDFs were calculated is provided in **Table 11**. The detailed development of the water and sewer SDFs are provided in **Appendices C** and **D**, respectively.

Table 11 – SDF Calculation per ERU

Description	Water System	Sewer System
Cost per Gallon of Capacity	\$ 8.45	\$ 9.92
Level of Service per ERU (gpd)	400	263
Calculated SDF per ERU	\$ 3,378	\$ 2,604
Less Rounding Adjustment	(78)	(4)
Calculated SDF per ERU (Rounded)	\$ 3,300	\$ 2,600

A summary of the existing and calculated SDFs for a new residential connection is provided in **Table 12**.

Table 12 – Comparison of Fees per ERU

Description	Existing Fee	Calculated Fee	Difference
System Development Fees			
Water System	\$ 1,350	\$ 3,300	\$ 1,950
Sewer System	\$ 1,000	\$ 2,600	\$ 1,600
Total	\$ 2,350	\$ 5,900	\$ 3,550

5.2 Application of SDFs

For developing SDFs, the standard daily flow number is established as one ERU. An ERU provides a standard unit of measure such that fees for connections with larger than average demand requirements can be calculated on an equivalency basis. As previously addressed, one ERU is equal to the flow capacity for a single-family dwelling unit with a standard 5/8-inch x 3/4-inch water meter. New connections with larger water meters have the potential of placing more demand on the system (i.e., require more capacity) and are assessed ERU factors accordingly. The City's existing methodology for increasing the SDFs for larger connection sizes is based on standardized demand criteria established by the American Water Works Association (AWWA) pursuant to the size of the water meter. Utilizing the AWWA demand criteria, the applicable ERU factors for larger water meters are based on the incremental increase in potential demand as compared to the standard meter size. Since sewer flow is customarily a direct function of water flow, applying the water and sewer SDFs based upon the size of the water meter is equitable, administratively efficient, and consistent with industry standards. Maintaining this same structural methodology, the calculated water and sewer SDFs for the various water meter sizes are developed in **Appendix E** and provided in **Table 13**.

Table 13 – Meter-Based System Development Fees

Description	Meter Factor ^[1]	Water System Development Fee	Sewer System Development Fee	WSACC ^[2]	Total
Meter Size:					
5/8 Inch	1.00	\$ 3,300	\$ 2,600	\$ 2,968	\$ 8,868
3/4 Inch	1.00	\$ 3,300	\$ 2,600	\$ 2,968	\$ 8,868
1.0 Inch	2.50	\$ 8,250	\$ 6,500	\$ 4,947	\$ 19,697
1.5 Inch	5.00	\$ 16,500	\$ 13,000	\$ 9,893	\$ 39,393
2.0 Inch	8.00	\$ 26,400	\$ 20,800	\$ 15,829	\$ 63,029
3.0 Inch	15.00	\$ 49,500	\$ 39,000	\$ 31,659	\$ 120,159
4.0 Inch	25.00	\$ 82,500	\$ 65,000	\$ 49,467	\$ 196,967
6.0 Inch	50.00	\$ 165,000	\$ 130,000	\$ 98,933	\$ 393,933
8.0 Inch	80.00	\$ 264,000	\$ 208,000	\$ 158,293	\$ 630,293
10.0 Inch	115.00	\$ 379,500	\$ 299,000	\$ 415,520	\$ 1,094,020

Notes:

[1] The calculated system development fees are based on the calculated fee per ERU as applied to the respective ERU factor. The methodology for incrementing the charges for larger connection sizes is based on standardized demand criteria established by the American Water Works Association (AWWA) and the Water Environment Federation (WEF) pursuant to the size of the water meter. Such factors are commonly applied consistently for both water and sewer fee calculations.

[2] Represents the existing FY2026 System Development Fees applied by WSACC for the recovery of wastewater treatment facility costs. These fees are independent of the City's fees and will be charged in addition to the City's fees. The City of Kannapolis has no involvement in the setting of WSACC's fees and they are provided for informational purposes only.

In situations where the application of the meter-based fees will result in the collection of fees significantly different than the potential demand requirement of a new customer requesting service, a special calculation methodology may be applied by the City's Public Utilities Department. For such situations, it is important for the utility to have the flexibility to utilize an ERU methodology for individual accounts based on specific capacity requirements. This alternative methodology is to apply the calculated unit costs per gallon of capacity as provided in **Appendix E** times the capacity requirement for the customer. This type of situation will be uncommon and will typically only involve larger commercial and industrial connections. It is anticipated that, in such situations, the City will require certified engineering documentation defining the capacity utilization needs for the new customer.

Section 6 – Implementation & Review

6.1 Adoption and Periodic Review of SDF Analysis

Upon completion of the SDF analysis, Chapter 162A sets forth certain criteria regarding the adoption and periodic review of SDFs. These include the following:

1. For not less than 45 days prior to consideration for adoption of the SDF analysis, the governmental unit shall post the analysis on its website and solicit and furnish a means to submit written comments which shall be considered by the preparer for potential modifications or revisions to the analysis.
2. Following expiration of the 45-day posting period, the governing body shall conduct a public hearing prior to considering adopting the analysis with any modifications.
3. The governmental unit shall publish the SDFs in its annual budget, rate plan or ordinance. Further, the SDF analysis should be updated at least every five years.

Section 7 – Conclusions & Recommendations

7.1 General Assumptions & Considerations

In the preparation of this Report, certain information has been used and relied upon that was provided to Willdan by other entities. Such information includes, but is not limited to, audited financial statements, annual operating budgets, capital information, asset listings, cost data, system capacities, and other information provided during the study. While the sources and applicable information are believed to be reliable, no independent verification of the information has been made, and no assurances are offered with respect to the accuracy of the applicable information. To the extent that the information used to develop the assumptions applied in the Report differs from the actual results, the analyses developed herein could be impacted accordingly.

7.2 Conclusions

This study has found a need for the City to establish a mechanism for recovering the capital costs associated with system growth and expansion. Based on the reviews, analyses and assumptions provided herein, it is concluded that:

1. The application of capital recovery fees for new system connections is common for public utility systems in North Carolina. As growth continues to impact the region, and as state and federal funding programs are reduced or eliminated, it is prudent management practice to adopt mechanisms to recover capital costs incurred by the utility for making service available to future customers.
2. Through Chapter 162A, the North Carolina legislature has found that it is prudent to require new customers to bear a portion of the costs of current capacity and future expansions their presence will demand. It should be noted that Willdan is not attempting to issue a legal opinion regarding Chapter 162A or any court proceedings leading to the enactment of Chapter 162A. The summary discussion of the bill and any prior court rulings is intended for informational purposes only. Any questions regarding the legal consideration provided herein should be directed to the City's legal counsel.
3. The SDFs developed herein are equitable and provide for reasonable recovery of the capital costs associated with providing service to new customers.
4. The SDFs developed herein are calculated in accordance with the requirements of Chapter 162A and utilize methodologies that are consistent with industry standards.

5. The calculated SDFs are based on a listing of existing system assets as provided by the City, as well as the capital improvement plan adopted by the City. After considering the calculation options addressed herein, the City selected the **combined cost** methodology as explained in **Section 1.3** of this Report. The selected methodology is common for public utility systems in North Carolina and is consistent with common industry standards.
6. The water and sewer LOS standards proposed herein for establishing an ERU basis are based on the City's existing planning methodology and are consistent with common industry practice.
7. The City currently imposes service line installation charges and other related operational charges for new customer connections. Since these other charges are intended to recover operating costs for providing incident-specific services, the SDFs developed herein will have no impact on the level or application methodology for these other connection-related charges.

7.3 Recommendations

Based on the reviews, analyses and assumptions discussed herein, as well as the resulting conclusions provided above, it is respectfully recommended that the City:

- Adopt the calculated SDFs and application methodology as developed in this Report, or other such SDF amounts as determined appropriate by the City but not to exceed the fee amounts calculated herein.
- Enact the new SDFs to become effective on July 1, 2026, or other such date as determined appropriate by the City Council; and
- Readdress the SDF study at least within the next 5 years, or at such times as future capital budgets are developed and additional capital costs are incurred that may result in material adjustments to the SDF as adopted.

City of Kannapolis, NC

Water & Sewer System Development Fee Study

Appendices

A	Detailed Asset Data & Existing Recoverable Costs
B	Capital Improvement Plan & Growth-Related Capital Costs
C	Water System Development Fee Calculation
D	Sewer System Development Fee Calculation
E	Summary of Calculated System Development Fees

City of Kannapolis, NC

Water & Sewer System Development Fee Study

Appendix A

Detailed Asset Data & Existing
Recoverable Costs



WATER & SEWER SYSTEM

EXISTING CAPITAL COSTS RECOVERABLE FROM CAPACITY FEES

Line	Description	Original Cost	Replacement Cost New	Accumulated Depreciation	RCNLD
WATER ASSETS					
Total Assets by Category:					
1	Buildings	\$ 17,783,798	\$ 42,344,951	\$ (17,197,529)	\$ 25,147,422
2	CIP Projects	7,508,186	11,577,038	0	11,577,038
3	Distribution/Collection	74,966,609	266,496,966	(161,666,644)	104,830,322
4	Infrastructure	18,013,703	27,989,332	(3,191,440)	24,797,892
5	Land	473,895	473,895	0	473,895
6	Major Equipment	4,291,831	6,803,904	(5,558,215)	1,245,689
7	Total	\$ 123,038,022	\$ 355,686,084	\$ (187,613,827)	\$ 168,072,257
Adjusted Assets - Recoverable:					
8	Buildings	\$ 17,675,683	\$ 41,736,724	\$ (16,685,172)	\$ 25,051,552
9	CIP Projects	7,413,806	11,459,685	0	11,459,685
10	Distribution/Collection	62,964,036	225,649,027	(139,956,738)	85,692,289
11	Infrastructure	9,510,376	15,801,015	(1,630,979)	14,170,036
12	Land	0	0	0	0
13	Major Equipment	0	0	0	0
14	Total	\$ 97,563,900	\$ 294,646,451	\$ (158,272,889)	\$ 136,373,562
SEWER ASSETS					
Total Assets by Category:					
15	Buildings	\$ 5,639,865	\$ 20,343,894	\$ (18,585,818)	\$ 1,758,076
16	CIP Projects	4,216,287	6,866,773	0	6,866,773
17	Distribution/Collection	48,261,318	141,382,222	(69,639,707)	71,742,515
18	Infrastructure	15,653,739	23,907,067	(2,485,843)	21,421,224
19	Land	365,171	365,171	0	365,171
20	Major Equipment	3,523,173	5,603,989	(4,404,632)	1,199,357
21	Total	\$ 77,659,553	\$ 198,469,114	\$ (95,115,999)	\$ 103,353,115
Adjusted Assets - Recoverable:					
22	Buildings	\$ 5,601,007	\$ 19,852,770	\$ (18,098,443)	\$ 1,754,327
23	CIP Projects	4,216,287	6,866,773	0	6,866,773
24	Distribution/Collection	33,482,300	98,082,008	(50,668,455)	47,413,553
25	Infrastructure	7,149,249	11,710,351	(927,882)	10,782,469
26	Land	0	0	0	0
27	Major Equipment	0	0	0	0
28	Total	\$ 50,448,843	\$ 136,511,902	\$ (69,694,780)	\$ 66,817,122
COMBINED ASSETS					
Total Assets by Category:					
29	Buildings	\$ 23,423,663	\$ 62,688,844	\$ (35,783,346)	\$ 26,905,498
30	CIP Projects	11,724,473	18,443,811	0	18,443,811
31	Distribution/Collection	123,227,927	407,879,187	(231,306,351)	176,572,836
32	Infrastructure	33,667,442	51,896,398	(5,677,283)	46,219,115
33	Land	839,066	839,066	0	839,066
34	Major Equipment	7,815,004	12,407,892	(9,962,846)	2,445,046
35	Total	\$ 200,697,574	\$ 554,155,198	\$ (282,729,826)	\$ 271,425,372

WATER & SEWER SYSTEM

EXISTING CAPITAL COSTS RECOVERABLE FROM CAPACITY FEES

Line	Description	Original Cost	Replacement Cost New	Accumulated Depreciation	RCNLD
Adjusted Assets - Recoverable:					
36	Buildings	\$ 23,276,689	\$ 61,589,493	\$ (34,783,614)	\$ 26,805,879
37	CIP Projects	11,630,093	18,326,458	0	18,326,458
38	Distribution/Collection	96,446,336	323,731,035	(190,625,193)	133,105,842
39	Infrastructure	16,659,625	27,511,366	(2,558,861)	24,952,505
40	Land	0	0	0	0
41	Major Equipment	0	0	0	0
42	Total	\$ 148,012,742	\$ 431,158,352	\$ (227,967,668)	\$ 203,190,684
System Allocation - Water (\$):					
43	Buildings			\$ 25,051,552	
44	CIP Projects			11,459,685	
45	Distribution/Collection			85,692,289	
46	Infrastructure			14,170,036	
47	Land			0	
48	Major Equipment			0	
49	Total			\$ 136,373,562	
System Allocation - Wastewater (\$):					
50	Buildings			\$ 1,754,327	
51	CIP Projects			6,866,773	
52	Distribution/Collection			47,413,553	
53	Infrastructure			10,782,469	
54	Land			0	
55	Major Equipment			0	
56	Total			\$ 66,817,122	
57	Grand Total Recoverable Assets			\$ 203,190,684	
COMPARISON TO TOTAL					
58	Total Utility Assets			\$ 271,425,372	
59	Combined Recoverable Assets			\$ 203,190,684	
Difference (Assets Excluded From Recovery):					
60	Excluded From Recovery (\$)			\$ 68,234,688	
61	Excluded From Recovery (%)				25.14%
DEBT SERVICE CREDIT					
62	Outstanding Debt Principal			\$ 60,690,730	
Allocation Percentage:					
63	Water				60.77%
64	Wastewater				39.23%
Allocated Debt Service Credit:					
65	Water			\$ 36,880,966	
66	Wastewater			23,809,764	
67	Total			\$ 60,690,730	

CITY OF KANNAPOLIS, NC
WATER & SEWER SYSTEM
ANALYSIS & EVALUATION OF EXISTING UTILITY ASSETS

APPENDIX A

Asset Classification	Asset Description	Date In Service	Book Cost	Accumulated Deprec	Book Net Book Value	System Allocation Water	Sewer	Year In Service	Asset Type	CCI Index Factor	All Asset Costs	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCN/LD Adjusted Dep	Include? Yes/No	Original Cost (\$ OC)	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCN/LD Adjusted Dep	
\$ 100,000																		Cost Limit						
Buildings	Buildings	1955 ADDITIONS	1/1/1955	\$ 5,139	\$ 5,139	\$ 0	50.00%	50.00%	1955	Treatment Structures & Improvements	21.095	\$ 5,139	\$ 5,139	0.00%	\$ 0	\$ 108,407	\$ 0	Yes	\$ 0	\$ 0	0.00%	\$ 0	\$ 0	
	Buildings	MAINTENANCE BUILDING	1/1/1973	11,488	11,488	0	50.00%	50.00%	1973	Treatment Structures & Improvements	8.860	11,488	11,488	0.00%	0	101,786	0	Yes	\$ 0	0	0.00%	0	0	
	Buildings	1966 ADDITIONS	1/1/1966	30,885	30,885	0	50.00%	50.00%	1965	Treatment Structures & Improvements	15.544	30,885	30,885	0.00%	0	480,079	0	Yes	0	0	0.00%	0	0	
	Buildings	1966 ADDITIONS	1/1/1966	12,565	12,565	0	50.00%	50.00%	1966	Treatment Structures & Improvements	15.077	12,565	12,565	0.00%	0	186,688	0	Yes	0	0	0.00%	0	0	
	Buildings	1972 ADDITIONS	1/1/1972	10,030	10,030	0	50.00%	50.00%	1972	Treatment Structures & Improvements	9.527	10,030	10,030	0.00%	0	85,527	0	Yes	0	0	0.00%	0	0	
	Buildings	PUBLIC WORKS OPERATION CENTER BUILDING	7/1/2001	2,300,000	1,104,000	1,196,000	50.00%	50.00%	2001	Treatment Structures & Improvements	2.777	2,300,000	1,104,000	52.00%	1,196,000	6,388,088	3,321,806	Yes	2,300,000	1,104,000	52.00%	1,196,000	6,388,088	
	Buildings	STORAGE AREA PIPE & FITTINGS	6/30/2013	139,495	33,417	106,078	50.00%	50.00%	2013	Treatment Structures & Improvements	1.761	139,495	33,417	76.04%	106,078	245,711	186,848	Yes	139,495	33,417	76.04%	106,078	245,711	
	Buildings	BULK STORAGE	8/5/2019	520,710	0	520,710	100.00%	0.00%	2019	Treatment Structures & Improvements	1.479	520,710	0	100.00%	520,710	770,199	770,199	Yes	520,710	0	100.00%	520,710	770,199	
	Buildings	Publics Capital 20x40x10	7/1/2001	7,286	7,286	0	50.00%	50.00%	2001	Treatment Structures & Improvements	1.527	7,286	7,286	0.00%	0	71,793	7,286	Yes	7,286	0	0.00%	0	7,286	
	Buildings	WATER TREATMENT PLANT	6/30/2005	15,441,968	6,202,524	9,239,444	100.00%	0.00%	2005	Treatment Structures & Improvements	2.363	15,441,968	6,202,524	59.83%	9,239,444	36,484,223	21,829,727	Yes	15,441,968	6,202,524	59.83%	9,239,444	36,484,223	
	Buildings	WATER TREATMENT PLANT	6/30/2005	493,257	198,125	295,132	100.00%	0.00%	2005	Treatment Structures & Improvements	2.363	493,257	198,125	59.83%	295,132	1,165,402	697,299	Yes	493,257	198,125	59.83%	295,132	697,299	
	Buildings	ROD Replacement (WTP)	11/26/2014	69,257	14,775	54,483	100.00%	0.00%	2014	Treatment Structures & Improvements	1.691	69,257	14,775	78.67%	54,483	171,103	92,121	Yes	0	0	0.00%	0	16,555,870	
	Buildings	WSAC BUILDING	7/1/1990	4,381,259	4,381,259	0	0.00%	100.00%	1990	Treatment Structures & Improvements	3.774	4,381,259	4,381,259	0.00%	0	16,535,870	0	Yes	4,381,259	4,381,259	0.00%	0	16,535,870	
	Subtotal Buildings				\$ 23,423,663	\$ 12,004,436	\$ 11,419,226				\$ 23,423,663	\$ 12,004,436		\$ 11,419,226	\$ 62,680,844	\$ 26,905,498		\$ 23,423,663	\$ 11,919,325		\$ 11,357,364	\$ 61,589,493	\$ 26,905,498	
CIP Projects	CIP Projects	CIP HighBridge Waterline Works Contract 1	6/30/2023	\$ 94,380	\$ 0	\$ 94,380	100.00%	0.00%	2023	Collecting & Impounding Res.	1.243	\$ 94,380	0	100.00%	\$ 94,380	\$ 177,353	\$ 177,353	Yes	\$ 0	\$ 0	0.00%	\$ 0	\$ 0	
	CIP Projects	CIP HighBridge Sewer Contract 2	6/30/2023	121,814	0	121,814	0.00%	100.00%	2023	Collecting & Impounding Res.	1.243	121,814	0	100.00%	121,814	151,465	151,465	Yes	121,814	0	100.00%	121,814	151,465	
	CIP Projects	CIP HighBridge-Elevated Tank Contract 3	6/30/2023	1,919,136	0	1,919,136	100.00%	0.00%	2023	Collecting & Impounding Res.	1.243	1,919,136	0	100.00%	1,919,136	2,386,275	2,386,275	Yes	1,919,136	0	100.00%	1,919,136	2,386,275	
	CIP Projects	PWOC- Renovations	10/16/2024	110,199	0	110,199	50.00%	50.00%	2024	Collecting & Impounding Res.	1.126	110,199	0	100.00%	110,199	124,128	124,128	Yes	110,199	0	100.00%	110,199	124,128	
	CIP Projects	HIGH BRIDGE	2/22/2019	7,391,352	0	7,391,352	100.00%	0.00%	2019	Collecting & Impounding Res.	1.650	7,391,352	0	100.00%	7,391,352	12,197,252	12,197,252	Yes	7,391,352	0	100.00%	7,391,352	12,197,252	
	CIP Projects	SPILLWAY CHUTE	8/27/2019	399,301	0	399,301	50.00%	50.00%	2019	Meters	2.151	399,301	0	100.00%	399,301	1,004,112	1,004,112	Yes	399,301	0	100.00%	399,301	1,004,112	
	CIP Projects	DOWNTOWN SEWER OUTFALL	1/1/2020	343,697	0	343,697	0.00%	100.00%	2020	Collecting & Impounding Res.	1.634	343,697	0	100.00%	343,697	554,618	554,618	Yes	343,697	0	100.00%	343,697	554,618	
	CIP Projects	CLEAR	6/30/2021	1,344,593	0	1,344,593	100.00%	0.00%	2021	Collecting & Impounding Res.	1.419	1,344,593	0	100.00%	1,344,593	1,908,608	1,908,608	Yes	1,344,593	0	100.00%	1,344,593	1,908,608	
	Subtotal CIP Projects				\$ 11,724,473	\$ 0	\$ 11,724,473				\$ 11,724,473	\$ 0		\$ 11,724,473	\$ 16,443,831	\$ 16,443,831		\$ 11,724,473	\$ 0		\$ 16,326,458	\$ 18,326,458		
Distribution/Collection	Distribution/Collection	Highway 29 Sewer Rehab	6/30/2023	\$ 230,864	\$ 12,024	\$ 218,840	0.00%	100.00%	2023	Mains-Average All Types	1.114	\$ 230,864	\$ 12,024	94.79%	\$ 218,840	\$ 257,255	\$ 243,856	Yes	\$ 230,864	\$ 12,024	94.79%	\$ 218,840	\$ 257,255	
	Distribution/Collection	1973 ADDITIONS	1/1/1973	61,887	61,887	0	50.00%	50.00%	1973	Mains-Average All Types	11.990	61,887	61,887	0.00%	0	742,023	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	1988 ADDITIONS	1/1/1988	5,705	5,705	0	50.00%	50.00%	1988	Mains-Average All Types	4.620	5,705	5,705	0.00%	0	26,360	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	1955 ADDITIONS	1/1/1955	15,030	15,030	0	50.00%	50.00%	1955	Mains-Average All Types	22.204	15,030	15,030	0.00%	0	33,971	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	1972 ADDITIONS	1/1/1972	24,262,966	24,262,966	0	50.00%	50.00%	1972	Mains-Average All Types	22.204	24,262,966	24,262,966	0.00%	0	3,099,106	3,099,106	Yes	24,262,966	24,262,966	0.00%	0	3,099,106	
	Distribution/Collection	1972 ADDITIONS	1/1/1972	7,356	7,356	0	50.00%	50.00%	1972	Mains-Average All Types	12.235	7,356	7,356	0.00%	0	89,934	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	1973 ADDITIONS	1/1/1973	11,119	11,119	0	50.00%	50.00%	1973	Mains-Average All Types	11.990	11,119	11,119	0.00%	0	133,321	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	1975 ADDITIONS	1/1/1975	19,956	19,956	0	50.00%	50.00%	1975	Mains-Average All Types	7.993	19,956	19,956	0.00%	0	159,516	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	1977 ADDITIONS	1/1/1977	19,011	19,011	0	50.00%	50.00%	1977	Mains-Average All Types	7.311	19,011	19,011	0.00%	0	138,965	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	1978 ADDITIONS	1/1/1978	11,855	11,855	0	50.00%	50.00%	1978	Mains-Average All Types	6.774	11,855	11,855	0.00%	0	80,308	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	1979 ADDITIONS	1/1/1979	9,940	9,940	0	50.00%	50.00%	1979	Mains-Average All Types	6.344	9,940	9,940	0.00%	0	63,057	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	1983 ADDITIONS	1/1/1983	23,581	23,581	0	50.00%	50.00%	1983	Mains-Average All Types	5.081	23,581	23,581	0.00%	0	119,802	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	1985 ADDITIONS	1/1/1985	35,352	35,352	0	50.00%	50.00%	1985	Mains-Average All Types	4.975	35,352	35,352	0.00%	0	175,879	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	1986 ADDITIONS	1/1/1986	9,728	9,728	0	50.00%	50.00%	1986	Mains-Average All Types	5.059	9,728	9,728	0.00%	0	49,215	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	1987 ADDITIONS	1/1/1987	48,510	48,510	0	50.00%	50.00%	1987	Mains-Average All Types	4.914	48,510	48,510	0.00%	0	238,374	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	ELEVATED WATER TANKS	1/1/1984	15,499	15,499	0	100.00%	0.00%	1984	Elevated Steel Tanks	10.550	15,499	15,499	0.00%	0	163,514	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	SEWER SYSTEM	1/1/1960	7,250	7,250	0	0.00%	100.00%	1960	Mains-Average All Types	17.632	7,250	7,250	0.00%	0	127,835	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	SEWER SYSTEM	1/1/1963	259,395	259,395	0	0.00%	100.00%	1963	Mains-Average All Types	16.203	259,395	259,395	0.00%	0	4,202,895	0	Yes	259,395	259,395	0.00%	0	4,202,895	
	Distribution/Collection	WATER MAINS & VALVES	1/1/1966	79,616	79,616	0	100.00%	0.00%	1966	Mains-Average All Types	17.204	79,616	79,616	0.00%	0	1,767,777	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	WATER MAINS & VALVES	1/1/1966	15,597	15,597	0	100.00%	0.00%	1966	Mains-Average All Types	15.776	15,597	15,597	0.00%	0	246,600	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	WATER SYSTEM	1/1/1968	73,806	73,806	0	100.00%	0.00%	1968	Mains-Average All Types	15.372	73,806	73,806	0.00%	0	1,134,536	0	Yes	0	0	0.00%	0	0	
	Distribution/Collection	WATER SYSTEM	1/1/1969	61,787	61,787	0	100.00%	0.00%	1969	Mains-Average All Types	14.802	61,787	61,787	0.										

Asset Classification	Asset Description	Date In Service	Book Cost	Accumulated Deprec	Book Net Book Value	System Allocation Water	System Allocation Sewer	Year In Service	Asset Type	CCI Index Factor	All Asset Costs	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCN/LD Adjusted	Include? Yes/No	Original Cost (OC)	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCN/LD Adjusted
Distribution/Collector	SEWER LINES (DEVELOPERS)	6/30/2002	663,650	306,339	357,311	0.00%	100.00%	2002	Mains-Average All Types	3.496	663,650	306,339	53.83%	357,311	2,319,523	1,248,677	Yes	0	0	0.00%	0	0	0
Distribution/Collector	WATER SUPPLY/ALTERNATIVES STUDY (SECOND)	6/30/2003	31,362	13,652	17,710	100.00%	0.00%	2003	Mains-Average All Types	3.547	31,362	13,652	55.83%	17,710	11,251	62,716	Yes	0	0	0.00%	0	0	0
Distribution/Collector	SEWER LINES (DEVELOPERS)	6/30/2003	15,500	6,846	8,654	0.00%	100.00%	2003	Mains-Average All Types	3.547	15,500	6,846	55.83%	8,654	54,984	30,699	No	0	0	0.00%	0	0	0
Distribution/Collector	AFTON RUN SEWER PROJECT (LINES)	6/30/2003	1,116,446	493,097	623,349	0.00%	100.00%	2003	Mains-Average All Types	3.547	1,116,446	493,097	55.83%	623,349	3,960,410	2,211,229	Yes	1,116,446	493,097	55.83%	623,349	3,960,410	2,211,229
Distribution/Collector	BOY SCOUT CAMP ROAD WATER PROJECT (LINES)	6/30/2003	1,275,626	563,401	712,224	100.00%	0.00%	2003	Mains-Average All Types	3.547	1,275,626	563,401	55.83%	712,224	4,525,074	2,526,500	Yes	1,275,626	563,401	55.83%	712,224	4,525,074	2,526,500
Distribution/Collector	18TH ST. SEWER PUMP STATION	6/30/2003	303,488	134,041	169,447	0.00%	100.00%	2003	Pumping Structures & Improvements	2.735	303,488	134,041	55.83%	169,447	829,908	463,365	Yes	303,488	134,041	55.83%	169,447	829,908	463,365
Distribution/Collector	CENTURY DRIVE WATER PROJECT (LINES)	6/30/2003	198,988	87,636	110,772	100.00%	0.00%	2003	Mains-Average All Types	3.547	198,988	87,636	55.83%	110,772	703,394	392,946	Yes	198,988	87,636	55.83%	110,772	703,394	392,946
Distribution/Collector	SOUTH RIDGE AVENUE WATER PROJECT LINES	6/30/2003	553,452	244,441	309,011	0.00%	100.00%	2003	Mains-Average All Types	3.547	553,452	244,441	55.83%	309,011	1,963,280	1,096,165	Yes	553,452	244,441	55.83%	309,011	1,963,280	1,096,165
Distribution/Collector	CHESTNUT ST. SEWER PROJECT (LINES)	6/30/2003	169,371	74,806	94,566	0.00%	100.00%	2003	Mains-Average All Types	3.547	169,371	74,806	55.83%	94,566	600,817	335,456	Yes	169,371	74,806	55.83%	94,566	600,817	335,456
Distribution/Collector	ROWAN SALISBURY WATER PROJECT LINES	6/30/2003	668,841	295,405	373,437	0.00%	100.00%	2003	Mains-Average All Types	3.547	668,841	295,405	55.83%	373,437	2,372,606	1,324,705	Yes	668,841	295,405	55.83%	373,437	2,372,606	1,324,705
Distribution/Collector	SEWER LINES (DEVELOPERS)	6/30/2004	187,336	100,000	87,336	100.00%	0.00%	2004	Mains-Average All Types	3.321	187,336	100,000	53.41%	87,336	1,232,343	705,200	No	0	0	0.00%	0	0	0
Distribution/Collector	SEWER LINES (DEVELOPERS)	6/30/2004	332,880	140,364	192,516	0.00%	100.00%	2004	Mains-Average All Types	3.321	332,880	140,364	57.83%	192,516	1,105,024	639,408	No	0	0	0.00%	0	0	0
Distribution/Collector	WATER SUPPLY/ALTERNATIVES STUDY (SECOND)	10/30/2003	7,693	3,346	4,346	100.00%	0.00%	2003	Mains-Average All Types	3.547	7,693	3,346	56.50%	4,346	27,288	15,418	Yes	0	0	0.00%	0	0	0
Distribution/Collector	WASHINGTON LAKE SEWER PUMP STATION	6/30/2004	337,561	142,338	195,223	0.00%	100.00%	2004	Pumping Structures & Improvements	2.496	337,561	142,338	57.83%	195,223	842,475	487,231	Yes	337,561	142,338	57.83%	195,223	842,475	487,231
Distribution/Collector	AFTON RUN SEWER PROJECT (LINES)	6/30/2004	246,425	103,909	142,516	0.00%	100.00%	2004	Mains-Average All Types	3.321	246,425	103,909	57.83%	142,516	818,459	473,342	Yes	246,425	103,909	57.83%	142,516	818,459	473,342
Distribution/Collector	BOY SCOUT CAMP ROAD WATER PROJECT LINES	6/30/2004	574,908	242,420	332,488	100.00%	0.00%	2004	Mains-Average All Types	3.321	574,908	242,420	57.83%	332,488	1,909,458	1,104,303	Yes	574,908	242,420	57.83%	332,488	1,909,458	1,104,303
Distribution/Collector	STREWLEARD RD. MOORESVILLE RD. WATER PROJ	6/30/2004	148,681	62,694	85,987	100.00%	0.00%	2004	Mains-Average All Types	3.321	148,681	62,694	57.83%	85,987	493,818	285,591	Yes	148,681	62,694	57.83%	85,987	493,818	285,591
Distribution/Collector	CLOVERLEAF PLAZA WATER PROJECT LINES	6/30/2004	177,502	74,847	102,655	100.00%	0.00%	2004	Mains-Average All Types	3.321	177,502	74,847	57.83%	102,655	589,543	340,952	Yes	177,502	74,847	57.83%	102,655	589,543	340,952
Distribution/Collector	POLO CREEK DRIVE WATER PROJECT LINES	6/30/2004	26,372	27,987	38,365	100.00%	0.00%	2004	Pumping Structures & Improvements	2.496	26,372	27,987	57.83%	38,365	165,649	95,800	Yes	0	0	0.00%	0	0	0
Distribution/Collector	PINE CREEK WATER IMPROVEMENTS LINES	6/30/2004	62,651	26,418	36,233	100.00%	0.00%	2004	Mains-Average All Types	3.321	62,651	26,418	57.83%	36,233	208,084	120,342	Yes	0	0	0.00%	0	0	0
Distribution/Collector	U20098 UTILITY WATER PROJECTS LINES	6/30/2004	13,108	5,527	7,581	100.00%	0.00%	2004	Mains-Average All Types	3.321	13,108	5,527	57.83%	7,581	43,536	25,778	Yes	0	0	0.00%	0	0	0
Distribution/Collector	AFTON RUN SEWER LINES	6/30/2004	19,721	8,316	11,405	0.00%	100.00%	2004	Mains-Average All Types	3.321	19,721	8,316	57.83%	11,405	65,499	37,880	Yes	0	0	0.00%	0	0	0
Distribution/Collector	TRINITY CHURCH SUBDIVISIONS WATER PROJEC	6/30/2004	2,722	1,148	1,574	100.00%	0.00%	2004	Mains-Average All Types	3.321	2,722	1,148	57.83%	1,574	9,042	5,229	Yes	0	0	0.00%	0	0	0
Distribution/Collector	KANNAPOLIS PARKWAY WATER PROJECT LINES	6/30/2004	714,703	312,751	401,952	100.00%	0.00%	2004	Mains-Average All Types	3.321	714,703	312,751	57.83%	401,952	2,373,243	1,413,346	Yes	714,703	312,751	57.83%	401,952	2,373,243	1,413,346
Distribution/Collector	TRINITY CHURCH WATER PROJECT LINES	6/30/2004	741,703	312,751	428,951	100.00%	0.00%	2004	Mains-Average All Types	3.321	741,703	312,751	57.83%	428,951	2,463,440	1,424,689	Yes	741,703	312,751	57.83%	428,951	2,463,440	1,424,689
Distribution/Collector	BRIARCLIFF DRIVE WATER PROJECT LINES	6/30/2004	137,327	57,906	79,421	100.00%	0.00%	2004	Mains-Average All Types	3.321	137,327	57,906	57.83%	79,421	456,108	263,782	Yes	137,327	57,906	57.83%	79,421	456,108	263,782
Distribution/Collector	ENGLEWOOD DRIVE WATER PROJECT LINES	6/30/2004	2,322	99	1,343	100.00%	0.00%	2004	Mains-Average All Types	3.321	2,322	99	57.83%	1,343	7,712	4,460	Yes	0	0	0.00%	0	0	0
Distribution/Collector	CHESTNUT STREET SEWER PROJECT CT LINES	6/30/2004	68	28	99	100.00%	0.00%	2004	Mains-Average All Types	3.321	68	28	57.84%	39	226	138	Yes	0	0	0.00%	0	0	0
Distribution/Collector	ROWAN SALISBURY WATER PROJECT LINES	6/30/2004	46,032	24,622	21,410	100.00%	0.00%	2004	Mains-Average All Types	3.321	46,032	24,622	57.83%	21,410	152,887	88,420	Yes	0	0	0.00%	0	0	0
Distribution/Collector	FLOYD ST. TO 18TH ST. WATER PROJECT LINE	6/30/2004	594,431	250,652	343,779	100.00%	0.00%	2004	Mains-Average All Types	3.321	594,431	250,652	57.83%	343,779	1,974,302	1,141,805	Yes	594,431	250,652	57.83%	343,779	1,974,302	1,141,805
Distribution/Collector	TRINITY STATES WATER PROJECT LINES	6/30/2004	3,048	1,285	1,763	100.00%	0.00%	2004	Mains-Average All Types	3.321	3,048	1,285	57.83%	1,763	10,123	5,854	Yes	0	0	0.00%	0	0	0
Distribution/Collector	DOGWOOD BLVD. WATER PROJECT LINES	6/30/2004	248,986	104,989	143,997	100.00%	0.00%	2004	Mains-Average All Types	3.321	248,986	104,989	57.83%	143,997	826,966	478,205	Yes	248,986	104,989	57.83%	143,997	826,966	478,205
Distribution/Collector	WOLFCHUCK DRIVE SEWER PROJECT LINES	6/30/2004	42,268	19,091	23,177	100.00%	0.00%	2004	Mains-Average All Types	3.321	42,268	19,091	57.83%	23,177	140,387	81,191	Yes	0	0	0.00%	0	0	0
Distribution/Collector	TRANQUILITY WATER AND SEWER PROJECT LINE	6/30/2004	456,679	192,566	264,113	50.00%	50.00%	2004	Mains-Average All Types	3.321	456,679	192,566	57.83%	264,113	1,536,781	877,205	Yes	456,679	192,566	57.83%	264,113	1,536,781	877,205
Distribution/Collector	KGBP WATER & SEWER IMPROVEMENTS LINES	6/30/2004	18,164	7,659	10,505	50.00%	50.00%	2004	Mains-Average All Types	3.321	18,164	7,659	57.83%	10,505	60,328	34,890	Yes	0	0	0.00%	0	0	0
Distribution/Collector	WATER LINES (DEVELOPERS)	6/30/2005	547,725	220,003	327,722	100.00%	0.00%	2005	Mains-Average All Types	3.035	547,725	220,003	59.83%	327,722	1,662,588	994,782	No	0	0	0.00%	0	0	0
Distribution/Collector	SEWER LINES (DEVELOPERS)	6/30/2005	738,700	296,711	441,989	0.00%	100.00%	2005	Mains-Average All Types	3.035	738,700	296,711	59.83%	441,989	2,242,262	1,341,652	No	0	0	0.00%	0	0	0
Distribution/Collector	KCBP WATER & SEWER IMPROVEMENTS (LINES)	6/30/2005	6,102	2,451	3,651	50.00%	50.00%	2005	Mains-Average All Types	3.035	6,102	2,451	59.83%	3,651	18,323	11,083	Yes	0	0	0.00%	0	0	0
Distribution/Collector	JACOBS RIDGE WATER PROJECT LINES	6/30/2005	16,566	6,502	9,906	100.00%	0.00%	2005	Mains-Average All Types	3.035	16,566	6,502	59.83%	9,906	50,256	30,072	Yes	16,566	6,502	59.83%	9,906	50,256	30,072
Distribution/Collector	FARM HILL SUBDIVISION WATER PROJECT LINE	6/30/2005	21,580	84,985	126,596	100.00%	0.00%	2005	Mains-Average All Types	3.035	21,580	84,985	59.83%	126,596	642,240	384,274	Yes	21,580	84,985	59.83%	126,596	642,240	384,274
Distribution/Collector	STREWLEARD RD./MOORESVILLE RD. WATER PROJ	6/30/2005	18,654	7,493	11,161	100.00%	0.00%	2005	Mains-Average All Types	3.035	18,654	7,493	59.83%	11,161	56,622	33,879	Yes	0	0	0.00%	0	0	0
Distribution/Collector	TRINITY CHURCH RD. WATER PROJECT LINES	6/30/2005	57,017	20,768	36,249	100.00%	0.00%	2005	Mains-Average All Types	3.035	57,017	20,768	59.83%	36,249	159,466	93,066	Yes	57,017	20,768	59.83%	36,249	159,466	93,066
Distribution/Collector	BISCAYNE DRIVE WATER & SEWER PROJECT LIN	6/30/2005	330,802	132,872	197,930	50.00%	50.00%	2005	Mains-Average All Types	3.035	330,802	132,872	59.83%	197,930	1,004,132	600,806	Yes	330,802	132,872	59.83%	197,930	1,004,132	600,806
Distribution/Collector	SHILOH CHURCH ROAD WATER LINE	6/30/2005	535,003	214,893	320,110	100.00%	0.00%	2005	Mains-Average All Types	3.035	535,003	214,893	59.83%	320,110	1,623,970	971,675	Yes	535,003	214,893	59.83%	320,110	1,623,970	971,675
Distribution/Collector	PILOTWAY WTMP BYPASS SEWER	6/30/2005	257,052	103,249	153,803	0.00%	100.00%	2005	Mains-Average All Types	3.035	257,052	103,249	59.83%	153,803	780,268	466,860	Yes	257,052	103,249	59.83%	153,803	780,268	466,860
Distribution/Collector	HIWY 73 SEWER	6/30/2005	1,500	603	898	0.00%	100.00%	2005	Mains-Average All Types	3.035	1,500	603	59.83%	898	4,553	2,724	Yes	0	0	0.00%	0	0	0
Distribution/Collector	TRINITY CHURCH SUBDIVISIONS WATER PROJEC	6/30/2005	1,327	131	1,196	0.00%	100.00%	2005	Mains-Average All Types	3.035	1,327	131	59.83%	1,196	6,902	5,706	Yes	0	0	0.00%	0	0	0
Distribution/Collector	AFTON RUN SEWER	6/30/2005	1,827	734	1,093	0.00%	100.00%	2005	Mains-Average All Types	3.035	1,827												

CITY OF KANNAPOLIS, NC
WATER & SEWER SYSTEM
ANALYSIS & EVALUATION OF EXISTING UTILITY ASSETS

Asset Classification	Asset Description	Date In Service	Book Cost	Accumulated Deprec	Book Net Book Value	System Allocation Water	Sewer	Year In Service	Asset Type	CCI Index Factor	All Asset Costs	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCNLD Adjusted Depr	Include? Yes/No	Original Cost (OC)	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCNLD Adjusted Depr	
Infrastructure	Infrastructure																							
	Booster Pump Station - Kannapolis	12/22/2021	\$ 620,348	\$ 111,146	\$ 509,202	100.00%	0.00%	2021	Pumping Structures & Improvements	1268	\$ 620,348	\$ 111,146	82.08%	\$ 509,202	\$ 786,307	\$ 645,427	Yes	\$ 620,348	\$ 111,146	82.08%	\$ 509,202	\$ 786,307	\$ 645,427	
	Infrastructure	DONATED WATER AND SEWER FY 25	6/30/2025	3,166,743	5,278	3,166,465	50.00%	50.00%	2025	Mains-Average All Types	1000	3,166,743	5,278	99.83%	3,161,465	3,161,465	3,161,465	No	0	0	0.00%	0	0	0
	Infrastructure	LADY'S FUNERAL HOME SEWER REHABILITATION	1/01/2014	71,675	16,452	55,223	0.00%	100.00%	2014	Mains-Average All Types	1776	71,675	16,452	77.05%	55,223	127,316	98,092	Yes	0	0	0.00%	0	0	0
	Infrastructure	RELOCATION OF WATER LINES PROJ B-4808 RC	10/20/2014	191,570	41,281	150,289	100.00%	0.00%	2014	Mains-Average All Types	1776	191,570	41,281	78.45%	150,289	340,286	266,959	Yes	191,570	41,281	78.45%	150,289	340,286	266,959
	Infrastructure	DONATED WATER & SEWER PVM FROM	6/30/2014	1,655,040	366,867	1,288,173	50.00%	0.00%	2014	Pumping Structures & Improvements	1169	1,655,040	366,867	77.83%	1,288,173	2,798,407	2,178,033	No	0	0	0.00%	0	0	0
	Infrastructure	HWY 73 WATER LINE NC DOT UTILITY AGREEMENT	7/2/2014	146,115	0	146,115	100.00%	0.00%	2014	Mains-Average All Types	1776	146,115	0	100.00%	146,115	259,543	259,543	Yes	146,115	0	100.00%	146,115	259,543	259,543
	Infrastructure	MOORESVILLE ROAD	9/24/2014	2,930,453	0	2,930,453	50.00%	50.00%	2014	Mains-Average All Types	1776	2,930,453	0	100.00%	2,930,453	5,205,352	5,205,352	Yes	2,930,453	0	100.00%	2,930,453	5,205,352	5,205,352
	Infrastructure	DONATED WATER AND SEWER FY 15	6/30/2015	1,330,735	268,365	1,062,370	50.00%	50.00%	2015	Mains-Average All Types	1798	1,330,735	268,365	79.83%	1,062,370	2,392,131	1,909,718	No	0	0	0.00%	0	0	0
	Infrastructure	DONATED WATER & SEWER FY 16	6/30/2016	1,204,695	985,186	219,509	50.00%	0.00%	2016	Mains-Average All Types	1798	1,204,695	985,186	81.64%	219,509	1,758,959	1,758,959	Yes	1,204,695	985,186	81.64%	219,509	1,758,959	1,758,959
	Infrastructure	SUBURBY RD SEWER IMPROVEMENTS PROF SVC	7/27/2016	4,682,590	569,715	4,112,875	0.00%	100.00%	2016	Pumping Structures & Improvements	1629	4,682,590	569,715	87.83%	4,112,875	6,698,542	6,698,542	Yes	4,682,590	569,715	87.83%	4,112,875	7,626,424	6,698,542
	Infrastructure	Containment System to S RIDGE AVE TANK	6/16/2017	165,547	26,763	138,784	100.00%	0.00%	2017	Elevated Steel Tanks	1817	165,547	26,763	83.83%	138,784	300,865	252,225	Yes	165,547	26,763	83.83%	138,784	300,865	252,225
	Infrastructure	DONATED WATER AND SEWER FY 17	6/30/2017	1,115,755	180,380	935,375	50.00%	50.00%	2017	Mains-Average All Types	1706	1,115,755	180,380	83.83%	935,375	1,502,973	1,595,326	No	0	0	0.00%	0	0	0
	Infrastructure	ELEVATED STORAGE TANK	1/30/2018	1,277,210	577,979	799,230	100.00%	0.00%	2018	Elevated Steel Tanks	1758	1,277,210	577,979	59.44%	799,230	2,245,760	1,334,980	Yes	1,277,210	577,979	59.44%	799,230	2,245,760	1,334,980
	Infrastructure	CENTERGROVE RD WATER LINE	10/16/2017	399,915	61,356	338,558	50.00%	0.00%	2017	Mains-Average All Types	1706	399,915	61,356	84.66%	338,558	682,074	577,428	Yes	399,915	61,356	84.66%	338,558	682,074	577,428
	Infrastructure	S WALNUT STREET WATER LINE	12/31/2017	60,263	9,140	51,123	100.00%	0.00%	2017	Mains-Average All Types	1706	60,263	9,140	84.83%	51,123	102,781	87,193	Yes	60,263	9,140	0.00%	0	0	0
	Infrastructure	RCCC COSMETOLOGY WATER LINE	1/30/2018	615,172	89,572	525,600	100.00%	0.00%	2018	Mains-Average All Types	1638	615,172	89,572	85.44%	525,600	1,007,639	860,921	Yes	615,172	89,572	85.44%	525,600	1,007,639	860,921
	Infrastructure	DONATED WATER AND SEWER FY 18	6/30/2018	1,653,470	234,242	1,419,228	50.00%	50.00%	2018	Pumping Structures & Improvements	1509	1,653,470	234,242	85.83%	1,419,228	2,495,697	2,142,140	No	0	0	0.00%	0	0	0
	Infrastructure	PUSH STREET WATER LINE	9/4/2018	3,768,298	0	3,768,298	50.00%	0.00%	2018	Mains-Average All Types	1638	3,768,298	0	100.00%	3,768,298	6,172,390	6,172,390	Yes	3,768,298	0	100.00%	3,768,298	6,172,390	6,172,390
	Infrastructure	JM JOHNSON WATERLINE	4/10/2019	651,117	76,725	574,393	100.00%	0.00%	2019	Mains-Average All Types	1573	651,117	76,725	88.22%	574,393	1,024,527	903,802	Yes	651,117	76,725	88.22%	574,393	1,024,527	903,802
	Infrastructure	SLUDGE LAGOON	6/5/2019	1,001,433	0	1,001,433	0.00%	100.00%	2019	Pumping Structures & Improvements	1479	1,001,433	0	100.00%	1,001,433	1,481,251	1,481,251	Yes	1,001,433	0	100.00%	1,001,433	1,481,251	1,481,251
	Infrastructure	DONATED WATER AND SEWER FY 19	6/28/2019	1,152,708	140,246	1,012,462	50.00%	50.00%	2019	Pumping Structures & Improvements	1479	1,152,708	140,246	87.83%	1,012,462	1,705,007	1,497,564	No	0	0	0.00%	0	0	0
	Infrastructure	DONATED WATER AND SEWER FY 20	6/30/2020	2,635,020	267,894	2,367,126	50.00%	50.00%	2020	Pumping Structures & Improvements	1438	2,635,020	267,894	89.83%	2,367,126	3,789,980	3,404,665	No	0	0	0.00%	0	0	0
	Infrastructure	DONATED WATER AND SEWER FY 21	6/30/2021	2,940,970	270,079	2,670,891	50.00%	50.00%	2021	Pumping Structures & Improvements	1268	2,940,970	270,079	91.83%	2,670,891	3,727,159	3,447,320	No	0	0	0.00%	0	0	0
	Infrastructure	Concrete Pad	9/10/2024	10,500	583	9,917	50.00%	50.00%	2024	Pumping Structures & Improvements	1016	10,500	583	94.44%	9,917	10,669	10,076	Yes	0	0	0.00%	0	0	0
	Infrastructure	FILTER #1 UNDERDRAIN & FILTER REPLACEMENT	4/1/2014	209,857	47,218	162,639	100.00%	0.00%	2014	Filter Gallery Piping-Installed	1806	209,857	47,218	77.50%	162,639	378,948	293,685	Yes	209,857	47,218	77.50%	162,639	378,948	293,685
	Infrastructure	FILTER #2 DRAIN VALVE	6/18/2019	10,249	10,249	0	100.00%	0.00%	2019	Filter Gallery Piping-Installed	1574	10,249	10,249	0.00%	0	16,136	0	Yes	0	0	0.00%	0	0	0
		Subtotal Infrastructure		\$ 33,667,442	\$ 3,500,483	\$ 30,166,959						\$ 33,667,442	\$ 3,500,483		\$ 30,166,959	\$ 51,896,398	\$ 46,219,715		\$ 16,659,625	\$ 1,541,756		\$ 15,117,869	\$ 27,511,366	\$ 24,952,505
Land	Land																							
	PUBLIC WORKS CENTER LAND	7/1/1994	\$ 730,342	\$ 0	\$ 730,342	50.00%	50.00%	1994	Booke Value	1000	\$ 730,342	\$ 0	100.00%	\$ 730,342	\$ 730,342	\$ 730,342	No	\$ 0	\$ 0	0.00%	\$ 0	\$ 0	\$ 0	
	NW SERVICE DISTRICT LAND HWY 3	9/20/2017	73,300	0	73,300	100.00%	0.00%	2017	Booke Value	1000	73,300	0	100.00%	73,300	73,300	73,300	No	0	0	0.00%	0	0	0	
Land	SHILCH CHURCH ROAD DAVIDSON	8/27/2017	35,424	0	35,424	100.00%	0.00%	2017	Booke Value	1000	35,424	0	100.00%	35,424	35,424	35,424	No	0	0	0.00%	0	0	0	
	Subtotal Land		\$ 839,066	\$ 0	\$ 839,066						\$ 839,066	\$ 0		\$ 839,066	\$ 839,066	\$ 839,066		\$ 0	\$ 0		\$ 0	\$ 0	\$ 0	
Major Equipment	Major Equipment																							
	Major Equipment	Cyworks and Northstar Server	6/19/2018	\$ 25,600	\$ 25,600	\$ 0	50.00%	50.00%	2018	Mains-Average All Types	1638	\$ 25,600	\$ 25,600	0.00%	\$ 0	\$ 41,932	\$ 0	No	\$ 0	\$ 0	0.00%	\$ 0	\$ 0	\$ 0
	Major Equipment	CUSTOMERCONNECT - LICENSE	6/18/2019	23,823	23,823	0	50.00%	50.00%	2019	Mains-Average All Types	1573	23,823	23,823	0.00%	0	\$ 37,494	\$ 0	No	0	0	0.00%	0	0	0
	Major Equipment	KIOSK - CUSTOMER SERVICE	11/30/2020	111,037	103,634	7,402	50.00%	50.00%	2020	Mains-Average All Types	1497	111,037	103,634	6.67%	7,402	166,208	110,801	No	0	0	0.00%	0	0	0
	Major Equipment	W86 2021 Ford Escape Hybrid	9/20/2021	35,490	27,209	8,281	50.00%	50.00%	2021	Mains-Average All Types	1378	35,490	27,209	23.33%	8,281	48,911	11,413	No	0	0	0.00%	0	0	0
	Major Equipment	Spare pump for South Ridge	2/11/2022	5,117	3,496	1,620	50.00%	50.00%	2022	Mains-Average All Types	1209	5,117	3,496	31.67%	1,620	6,184	1,958	No	0	0	0.00%	0	0	0
	Major Equipment	PUSH CAMERA for NW Response truck	2/28/2022	10,046	6,865	3,181	50.00%	50.00%	2022	Mains-Average All Types	1209	10,046	6,865	31.67%	3,181	12,174	3,845	No	0	0	0.00%	0	0	0
	Major Equipment	WB 2022 FORD F250 CREW CAB	6/30/2023	58,4																				

CITY OF KANNAPOLIS, NC
WATER & SEWER SYSTEM
ANALYSIS & EVALUATION OF EXISTING UTILITY ASSETS

APPENDIX A

Asset Classification	Asset Description	Date In Service	Book Cost	Accumulated Deprec	Book Net Book Value	System Allocation Water Sewer	Year In Service	Asset Type	CCI Index Factor	All Asset Costs	Total Depreciation	Remaining Life %	OCCLD	Replacement Cost New (RCN)	RCNCLD Adjusted Depr	Include? Yes/No	Original Cost (OC)	Total Depreciation	Remaining Life %	OCCLD	Replacement Cost New (RCN)	RCNCLD Adjusted Depr
Major Equipment	W6-2033 GOWDIN 10 DUMPEODY (FREIGHTLNR)	3/1/2013	79,174	79,174	0	50.00%	50.00%	2013	Mains-Average All Types	1.92	79,174	79,174	0.00%	0	151,403	0	No	0	0.00%	0	0	0
Major Equipment	VCAM-5 PUSH CAMERA SYSTEM	3/20/2014	10,049	10,049	0	50.00%	50.00%	2014	Mains-Average All Types	1.776	10,049	10,049	0.00%	0	17,850	0	No	0	0.00%	0	0	0
Major Equipment	W29-E50 T4 2014 BOBCAT COMPACT EXCAVATO	9/22/2014	64,969	64,969	0	50.00%	50.00%	2014	Mains-Average All Types	1.776	64,969	64,969	0.00%	0	115,403	0	No	0	0.00%	0	0	0
Major Equipment	W13-FORKLIFT FOR PW WAREHOUSE	12/16/2014	28,800	28,800	0	50.00%	50.00%	2014	Mains-Average All Types	1.776	28,800	28,800	0.00%	0	51,577	0	No	0	0.00%	0	0	0
Major Equipment	W-28 SULLAIR 18SDRQ COMPRESSOR	12/31/2014	14,850	14,850	0	50.00%	50.00%	2014	Mains-Average All Types	1.776	14,850	14,850	0.00%	0	26,378	0	No	0	0.00%	0	0	0
Major Equipment	W18-10206 KENWORTH 1370 DUMP TRUCK	7/27/2015	114,087	114,087	0	50.00%	50.00%	2015	Mains-Average All Types	1.798	114,087	114,087	0.00%	0	225,083	0	No	0	0.00%	0	0	0
Major Equipment	W63-10206V PORTABLE GEN ONAN CUMMINS	7/31/2015	85,790	85,790	0	50.00%	50.00%	2015	Mains-Average All Types	1.798	85,790	85,790	0.00%	0	154,716	0	No	0	0.00%	0	0	0
Major Equipment	DIESEL TANK UPGRADE	10/19/2015	65,633	65,633	0	50.00%	50.00%	2015	Mains-Average All Types	1.798	65,633	65,633	0.00%	0	117,981	0	No	0	0.00%	0	0	0
Major Equipment	W64-F550 FORD	3/23/2016	107,286	107,286	0	50.00%	50.00%	2016	Mains-Average All Types	1.784	107,286	107,286	0.00%	0	191,422	0	No	0	0.00%	0	0	0
Major Equipment	W-20 3ET VAC WESTERN STR CHASIS 2017	9/19/2016	380,000	380,000	0	50.00%	50.00%	2016	Mains-Average All Types	1.784	380,000	380,000	0.00%	0	678,006	0	No	0	0.00%	0	0	0
Major Equipment	W-45 1801 T4 BOBCAT COMPACT EXCAV	9/26/2017	96,947	96,947	0	50.00%	50.00%	2017	Mains-Average All Types	1.784	96,947	96,947	0.00%	0	172,947	0	No	0	0.00%	0	0	0
Major Equipment	W17 Magnium/Generic MMG45, 30/36KW	11/28/2016	27,510	27,510	0	50.00%	50.00%	2016	Mains-Average All Types	1.784	27,510	27,510	0.00%	0	49,084	0	No	0	0.00%	0	0	0
Major Equipment	Replacement of boring tool	3/31/2017	5,000	5,000	0	50.00%	50.00%	2017	Mains-Average All Types	1.706	5,000	5,000	0.00%	0	8,528	0	No	0	0.00%	0	0	0
Major Equipment	W12 2018 FORD F-150	1/29/2018	27,500	27,500	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	27,500	27,500	0.00%	0	45,044	0	No	0	0.00%	0	0	0
Major Equipment	W42 MOBILE ARIES PATHFINDER INSPECT SYS	2/19/2018	67,700	67,700	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	67,700	67,700	0.00%	0	110,891	0	No	0	0.00%	0	0	0
Major Equipment	W72 2018 FORD ESCAPE	1/19/2018	22,980	22,980	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	22,980	22,980	0.00%	0	37,641	0	No	0	0.00%	0	0	0
Major Equipment	W-52 2018 CHEVY COLORADO TRUCK	3/29/2018	25,907	25,907	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	25,907	25,907	0.00%	0	42,436	0	No	0	0.00%	0	0	0
Major Equipment	W-53 2018 CHEVY COLORADO TRUCK	3/29/2018	25,907	25,907	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	25,907	25,907	0.00%	0	42,436	0	No	0	0.00%	0	0	0
Major Equipment	W27 DOOSAN PORTABLE AIR COMPRESSOR	4/25/2018	20,336	20,336	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	20,336	20,336	0.00%	0	33,310	0	No	0	0.00%	0	0	0
Major Equipment	W81 S2C TRAC EASEMENT MACHINE	4/25/2018	108,928	108,928	0	50.00%	50.00%	2018	Mains-Average All Types	1.497	108,928	108,928	0.00%	0	210,794	0	No	0	0.00%	0	0	0
Major Equipment	W-37 HUDSON TRAILER	6/30/2018	1,000	1,000	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	1,000	1,000	0.00%	0	1,638	0	No	0	0.00%	0	0	0
Major Equipment	W-66 HUDSON TRAILER	6/30/2018	1,000	1,000	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	1,000	1,000	0.00%	0	1,638	0	No	0	0.00%	0	0	0
Major Equipment	W35 CATERPILLAR BACKHOE	6/30/2018	1,000	1,000	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	1,000	1,000	0.00%	0	1,638	0	No	0	0.00%	0	0	0
Major Equipment	W5 2017 CHEVY SILVERADO 3500	8/22/2018	51,623	51,623	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	51,623	51,623	0.00%	0	84,528	0	No	0	0.00%	0	0	0
Major Equipment	AC200 PLUS KIT	10/19/2018	15,699	15,699	0	50.00%	50.00%	2018	Mains-Average All Types	1.638	15,699	15,699	0.00%	0	25,715	0	No	0	0.00%	0	0	0
Major Equipment	LATERAL CAMERA SYSTEM	5/23/2019	6,335	5,581	754	50.00%	50.00%	2019	Mains-Average All Types	1.573	6,335	5,581	11.90%	754	9,968	1,187	No	0	0.00%	0	0	0
Major Equipment	BORING TOOL - GRUNDOMAT 65P	9/4/2019	5,076	5,076	0	50.00%	50.00%	2019	Mains-Average All Types	1.573	5,076	5,076	0.00%	0	7,987	0	No	0	0.00%	0	0	0
Major Equipment	BORING TOOL - GRUNDOMAT 103P	9/4/2019	11,171	11,171	0	50.00%	50.00%	2019	Mains-Average All Types	1.573	11,171	11,171	0.00%	0	17,577	0	No	0	0.00%	0	0	0
Major Equipment	AM METRIC SYSTEM	11/26/2019	122,079	122,079	29,171	100.00%	0.00%	2019	Mains-Average All Types	1.573	122,079	122,079	19.05%	29,171	243,180	45,901	No	0	0.00%	0	0	0
Major Equipment	W74 2019 FORD F550	2/25/2020	71,973	71,973	0	50.00%	50.00%	2020	Mains-Average All Types	1.497	71,973	71,973	0.00%	0	125,715	0	No	0	0.00%	0	0	0
Major Equipment	2020 PETERBILT 348 DUMP TRUCK	3/26/2020	139,695	139,695	0	50.00%	50.00%	2020	Mains-Average All Types	1.497	139,695	139,695	0.00%	0	209,107	0	No	0	0.00%	0	0	0
Major Equipment	ROMAC SEWER TAP MACHINE	4/10/2020	7,793	5,844	1,948	50.00%	50.00%	2020	Mains-Average All Types	1.497	7,793	5,844	25.00%	1,948	11,665	2,916	No	0	0.00%	0	0	0
Major Equipment	W79 BOBCAT ESS MINI EXCAVATOR	3/23/2020	67,649	67,649	0	50.00%	50.00%	2020	Mains-Average All Types	1.497	67,649	67,649	0.00%	0	101,263	0	No	0	0.00%	0	0	0
Major Equipment	W75 BOBCAT TR70 SKIDSTEER	6/30/2020	163,028	163,028	0	50.00%	50.00%	2020	Mains-Average All Types	1.497	163,028	163,028	0.00%	0	251,598	0	No	0	0.00%	0	0	0
Major Equipment	W78 2020 HUDSON PRO SERIES TRAILER	5/18/2020	19,437	14,347	5,091	50.00%	50.00%	2020	Mains-Average All Types	1.497	19,437	14,347	26.19%	5,091	29,095	7,620	No	0	0.00%	0	0	0
Major Equipment	W80 TORO GRANDSTAND	7/12/2020	7,756	7,756	0	50.00%	50.00%	2020	Mains-Average All Types	1.497	7,756	7,756	0.00%	0	11,610	0	No	0	0.00%	0	0	0
Major Equipment	SUMBERSIBLE PUMP	8/28/2020	6,763	6,651	113	0.00%	100.00%	2020	Electric Pumping Equipment	1.425	6,763	6,651	1.67%	113	9,638	161	No	0	0.00%	0	0	0
Major Equipment	W84 2020 FORD F550	10/19/2020	78,554	74,626	3,928	50.00%	50.00%	2020	Mains-Average All Types	1.497	78,554	74,626	5.00%	3,928	117,586	5,879	No	0	0.00%	0	0	0
Major Equipment	W83 2019 FORD F550	10/19/2020	78,554	74,626	3,928	50.00%	50.00%	2020	Mains-Average All Types	1.497	78,554	74,626	5.00%	3,928	117,586	5,879	No	0	0.00%	0	0	0
Major Equipment	W77 2020 PETERBILT 348 DUMP TRUCK	12/1/2020	139,990	128,324	11,666	50.00%	50.00%	2020	Mains-Average All Types	1.497	139,990	128,324	8.33%	11,666	209,548	7,742	No	0	0.00%	0	0	0
Major Equipment	W85 Freightliner VAN-CON	3/1/2021	630,309	546,268	84,041	50.00%	50.00%	2021	Mains-Average All Types	1.378	630,309	546,268	13.33%	84,041	868,667	115,822	No	0	0.00%	0	0	0
Major Equipment	Hach DR6000 Spectrophotometer	7/28/2021	9,314	7,451	1,863	100.00%	0.00%	2021	Mains-Average All Types	1.378	9,314	7,451	20.00%	1,863	12,836	2,567	No	0	0.00%	0	0	0
Major Equipment	WTP-16 3KV VOLT	6/30/2021	36,812	16,338	20,474	50.00%	50.00%	2021	Mains-Average All Types	1.114	36,812	16,338	58.33%	20,474	51,023	21,508	No	0	0.00%	0	0	0
Major Equipment	WTP-16 Skid Steer	6/30/2021	58,482	24,368	34,115	50.00%	50.00%	2021	Mains-Average All Types	1.114	58,482	24,368	58.33%	34,115	65,168	38,015	No	0	0.00%	0	0	0
Major Equipment	Ditch Witch FX20 Vac LCCR Excav & Trailr	10/13/2021	39,669	13,884	25,785	50.00%	50.00%	2021	Mains-Average All Types	1.114	39,669	13,884	65.00%	25,785	44,204	28,733	No	0	0.00%	0	0	0
Major Equipment	WTP-11 2023 Ford 350 XL Crew Cab	10/18/2021	77,365	27,078	50,287	50.00%	50.00%	2021	Mains-Average All Types	1.114	77,365	27,078	65.00%	50,287	86,209	56,036	No	0	0.00%	0	0	0
Major Equipment	WTP-11 2023 Ford Maverick	10/19/2021	30,150	10,553	19,598	50.00%	50.00%	2021	Mains-Average All Types	1.114	30,150	10,553	65.00%	19,598	33,509	21,838	No	0	0.00%	0	0	0
Major Equipment	WTP-11 2024 Diamond C Dump LPT	11/29/2021	5,983	1,967	4,016	50.00%	50.00%	2021	Mains-Average All Types	1.114	5,983	1,967	66.67%	4,016	7,967	2,027	No	0	0.00%	0	0	0
Major Equipment	WTP-17 ESS 25HP R2 BOBCAT	2/27/2024	46,361	9,383	36,979	50.00%	50.00%	2024	Mains-Average All Types	1.028	46,361	9,383	79.76%	36,979	47,673	38,025	No	0	0.00%	0	0	0
Major Equipment	WTP-27 Brushcutter	12/13/2024	5,841	519	5,329	50.00%	50.00%	2024	Mains-Average All Types	1.028	5,841	681	88.33%	5,159	6,006	5,305	No	0	0.00%	0	0	0
Major Equipment	WTP-2 2024 Ford F250 Longbed	1/16/2025	55,800	50,220	5,580	50.00%	50.00%	2025	Mains-Average All Types	1.000	55,800	5,580	90.00%	50,220	55,800	50,220	No	0	0.00%	0	0	0
Major Equipment	WTP-23 2024 Bobcat zero turn mower	12/16/2024	10,339	912	10,028	50.00%	50.00%	2024	Mains-Average All Types	1.028	10,339	912	91.67%	10,028	10,339	10,339	No	0	0.00%	0	0	0
Major Equipment	Valve actuator	12/31/2024	10,138	1,183	8,955	50.00%	50.00%	2024	Treatment Structures & Improvements	1.016	10,138	1,183	88.33%	8,955	10,501	9,099	No	0	0.00%	0	0	0
Major Equipment	Valve actuator	1/30/2025	10,638	1,064	9,574	50.00%	50.00%	2025	Treatment Structures & Improvements	1.000	10,638	1,064	90.00%	9,574	10,638	9,574	No	0	0.00%	0	0	0
Major Equipment	Valve actuator	1/30/2025	10,343	1,034	9,309	50.00%	50.00%	2025	Treatment Structures & Improvements	1.000	10,343	1,034	90.00%	9,309	10,343	9,309	No	0	0.00%	0	0	0
Major Equipment	WTP-26 2025 Chevrolet Equinox	3/3/2025	31,880	2,125	29,755	50.00%	50.00%	2025	Mains-Average All													

Asset Classification	Asset Description	Date In Service	Book Cost	Accumulated Deprec	Book Net Book Value	System Allocation		Year In Service	Asset Type	CCI Index Factor	All Asset Costs	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCNLD Adjusted Depr	Include? Yes/No	Original Cost (OC)	Total Depreciation	Remaining Life %	OCLD	Replacement Cost New (RCN)	RCNLD Adjusted Depr
GROUP SUMMARY																							
Group			Cost Beginning	Depreciation Ending	Cost Ending						All Asset Costs	Total Depreciation		OCLD	Replacement Cost New (RCN)	RCNLD Adjusted Depr		Original Cost (OC)	Total Depreciation		OCLD	Replacement Cost New (RCN)	RCNLD Adjusted Depr
Buildings			\$ 23,423,663	\$ 12,004,436	\$ 11,419,226						\$ 23,423,663	\$ 12,004,436		\$ 11,419,226	\$ 62,688,844	\$ 26,905,498		\$ 23,276,689	\$ 11,919,325		\$ 11,357,364	\$ 61,589,493	\$ 26,805,879
CIP Projects			11,724,473	-	11,724,473						11,724,473	-		11,724,473	18,443,811	18,443,811		11,630,093	-		11,630,093	18,326,458	18,326,458
Distribution/Collection			123,227,927	48,992,850	74,235,077						123,227,927	48,992,850		74,235,077	407,879,187	176,572,836		96,647,860	37,798,476		323,731,035	133,105,842	133,105,842
Infrastructure			33,667,442	3,500,483	30,166,959						33,667,442	3,500,483		30,166,959	51,896,398	46,219,115		16,659,825	1,541,756		15,117,869	27,511,366	24,952,505
Land			839,066	-	839,066						839,066	-		839,066	839,066	839,066		-	-		-	-	-
Major Equipment			7,815,004	5,550,282	2,264,722						7,815,004	5,550,282		2,264,722	12,407,892	2,445,046		-	-		-	-	-
Grand Total			\$ 200,697,574	\$ 70,048,051	\$ 130,649,523						\$ 200,697,574	\$ 70,048,051		\$ 130,649,523	\$ 554,155,198	\$ 271,425,372		\$ 148,012,742	\$ 51,259,557		\$ 96,753,186	\$ 431,158,352	\$ 203,190,684
Water																							
Buildings			\$ 17,783,798	\$ 7,019,301	\$ 10,764,497						\$ 17,783,798	\$ 7,019,301		\$ 10,764,497	\$ 42,344,951	\$ 25,147,422		\$ 17,675,683	\$ 6,969,357		\$ 10,706,325	\$ 41,736,724	\$ 25,051,552
CIP Projects			7,508,186	-	7,508,186						7,508,186	-		7,508,186	11,577,038	11,577,038		7,413,806	-		7,413,806	11,459,685	11,459,685
Distribution/Collection			74,966,609	29,412,615	45,553,994						74,966,609	29,412,615		45,553,994	266,496,966	104,830,322		62,964,036	24,169,618		38,794,418	225,649,027	85,692,289
Infrastructure			18,013,703	1,952,873	16,060,830						18,013,703	1,952,873		16,060,830	24,797,892	24,797,892		9,510,376	972,041		8,538,335	15,801,015	14,770,036
Land			473,895	-	473,895						473,895	-		473,895	473,895	473,895		-	-		-	-	-
Major Equipment			4,291,831	3,146,834	1,144,997						4,291,831	3,146,834		1,144,997	6,803,904	1,245,689		-	-		-	-	-
Total			\$ 123,038,022	\$ 41,531,623	\$ 81,506,399						\$ 123,038,022	\$ 41,531,623		\$ 81,506,399	\$ 355,686,084	\$ 168,072,257		\$ 97,563,900	\$ 32,111,016		\$ 65,452,884	\$ 294,646,451	\$ 136,373,562
SEWER																							
Buildings			\$ 5,639,865	\$ 4,985,136	\$ 654,729						\$ 5,639,865	\$ 4,985,136		\$ 654,729	\$ 20,343,894	\$ 1,758,076		\$ 5,601,007	\$ 4,949,968		\$ 651,039	\$ 19,852,770	\$ 1,754,327
CIP Projects			4,216,287	-	4,216,287						4,216,287	-		4,216,287	6,866,773	6,866,773		4,216,287	-		4,216,287	6,866,773	6,866,773
Distribution/Collection			48,261,318	19,580,235	28,681,083						48,261,318	19,580,235		28,681,083	141,382,222	71,742,515		33,482,300	13,628,858		19,853,443	98,082,008	47,413,553
Infrastructure			15,653,739	1,547,610	14,106,129						15,653,739	1,547,610		14,106,129	23,907,067	21,421,224		7,149,249	569,715		6,579,534	11,710,351	10,782,469
Land			365,171	-	365,171						365,171	-		365,171	365,171	365,171		-	-		-	-	-
Major Equipment			3,523,173	2,403,447	1,119,726						3,523,173	2,403,447		1,119,726	5,603,989	1,199,357		-	-		-	-	-
Total			\$ 77,659,553	\$ 28,516,429	\$ 49,143,124						\$ 77,659,553	\$ 28,516,429		\$ 49,143,124	\$ 198,469,114	\$ 103,353,115		\$ 50,448,843	\$ 19,148,541		\$ 31,300,302	\$ 136,511,902	\$ 66,817,122

City of Kannapolis, NC

Water & Sewer System Development Fee Study

Appendix B

Capital Improvement Plan &
Growth-Related Capital Costs



Line	Description	Include (Y/N)	Total	Fiscal Year Ending June 30											
				2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	
Assumed Inflation Rate				0.00%	5.00%	5.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Compound Inflation Rate				100.00%	105.00%	110.25%	113.56%	116.96%	120.47%	124.09%	127.81%	131.64%	135.59%	139.66%	
WATER															
1	Charlotte Water Interconnect - Summers Walk (0.5 MGD)	Yes	\$ 413,700	\$ 0	\$ 413,700	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	
2	Mountain Vine Waterline	No	0	0	0	0	0	0	0	0	0	0	0	0	
3	Copper Creek Trail Waterline	No	0	0	0	0	0	0	0	0	0	0	0	0	
4	Dovefield Lane Waterline	No	0	0	0	0	0	0	0	0	0	0	0	0	
5	Jim Johnson Rd Waterline	Yes	1,023,437	0	0	0	0	1,023,437	0	0	0	0	0	0	
6	Canton Drive Waterline	No	0	0	0	0	0	0	0	0	0	0	0	0	
7	16" Connection under Railroad Tracks Downtown	Yes	2,076,115	0	0	0	0	2,076,115	0	0	0	0	0	0	
8	Charlotte Water Connection - Davidson Rd (1.0 MGD)	Yes	8,012,320	0	0	0	0	0	0	8,012,320	0	0	0	0	
9	Crusader Way Water Connection at Gibraltar Street	No	0	0	0	0	0	0	0	0	0	0	0	0	
10	East of 85 Waterline Installtions, Phase 1	No	0	0	0	0	0	0	0	0	0	0	0	0	
11	Glenn Ave Waterline - Segment 1 (24")	Yes	7,266,987	0	0	0	0	7,266,987	0	0	0	0	0	0	
12	Tucker Ave Waterline	No	0	0	0	0	0	0	0	0	0	0	0	0	
13	3 Sisters Water Connection at Trinity Church Rd	No	0	0	0	0	0	0	0	0	0	0	0	0	
14	Biscayne Drive connection to Archdale, etc.	Yes	3,708,971	0	0	0	0	0	0	3,708,971	0	0	0	0	
15	Glenn Ave Waterline - Segment 2 (24")	No	0	0	0	0	0	0	0	0	0	0	0	0	
16	East of 85 Waterline Installtions, Phase 2	No	0	0	0	0	0	0	0	0	0	0	0	0	
17	Glenn Ave Waterline - Segment 3 (16")	No	0	0	0	0	0	0	0	0	0	0	0	0	
18	New Downtown Elevated Tank (north side, 1 MG)	Yes	15,204,913	0	0	0	0	0	0	0	0	15,204,913	0	0	
19	Spring Valley / Hardwood Lane FH Line	No	0	0	0	0	0	0	0	0	0	0	0	0	
20	Odell School Rd Watermain Extension	No	0	0	0	0	0	0	0	0	0	0	0	0	
21	Salisbury Connection (2 MGD)	Yes	28,339,061	0	0	0	0	0	0	0	0	0	28,339,061	0	
22	Shiloh BPS Upgrade, Phase 1	No	0	0	0	0	0	0	0	0	0	0	0	0	
23	WTP Feed to Kannapolis Parkway, Option 1	No	0	0	0	0	0	0	0	0	0	0	0	0	
24	WTP High Service Pump Upgrade	No	0	0	0	0	0	0	0	0	0	0	0	0	
25	Odell School Rd Activity Center Water Main Extension	No	0	0	0	0	0	0	0	0	0	0	0	0	
26	Shiloh BPS Upgrade, Phase 2	No	0	0	0	0	0	0	0	0	0	0	0	0	
27	Albemarle WTP Expansion (2 MGD)	No	0	0	0	0	0	0	0	0	0	0	0	0	
28	Northwest Service District Elevated Storage Tank	No	0	0	0	0	0	0	0	0	0	0	0	0	
29	Off-Stream Raw Water Storage from Coddle Creek Reservoir	Yes	0	0	0	0	0	0	0	0	0	0	0	0	
30	WTP Rehab, Phase 1 - PFAS Removal	Yes	16,039,997	0	0	0	16,039,997	0	0	0	0	0	0	0	
31	WTP Rehab, Phase 2 - General (Part A)	Yes	1,623,872	0	0	0	1,623,872	0	0	0	0	0	0	0	
32	WTP Rehab, Phase 2 - General (Part B)	Yes	6,700,717	0	0	0	0	0	0	6,700,717	0	0	0	0	
33	WTP Rehab, Phase 2 - General (Part C)	Yes	5,830,525	0	0	0	0	0	0	0	0	0	5,830,525	0	
34	WTP Rehab, Phase 2 - General (Part D)	Yes	0	0	0	0	0	0	0	0	0	0	0	0	
35	WTP Rehab, Phase 2 - General (Part E)	Yes	0	0	0	0	0	0	0	0	0	0	0	0	
36	NCDOT Project BR-0181	Yes	526,339	0	0	0	0	526,339	0	0	0	0	0	0	
37	2-inch Water Main Replacement	Yes	29,650,094	0	525,000	1,102,500	1,135,575	3,508,927	3,614,195	3,722,620	3,834,299	3,949,328	4,067,808	4,189,842	
38	Total Water CIP		\$126,417,048	\$ 0	\$ 938,700	\$ 1,102,500	\$ 18,799,444	\$ 14,401,805	\$ 3,614,195	\$ 22,144,628	\$ 3,834,299	\$ 19,154,241	\$ 38,237,394	\$ 4,189,842	

Line	Description	Include (Y/N)	Total	Fiscal Year Ending June 30										
				2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
SEWER														
39	Forestbrook Force Main	Yes	\$ 275,000	\$ 275,000	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
40	Coldwater Creek Outfall	Yes	3,406,725	0	0	3,406,725	0	0	0	0	0	0	0	0
41	Edinburg Drive	Yes	2,530,238	0	0	2,530,238	0	0	0	0	0	0	0	0
42	Mallard Pointe Drive	No	0	0	0	0	0	0	0	0	0	0	0	0
43	Three Mile Branch Collector	No	0	0	0	0	0	0	0	0	0	0	0	0
44	Old Plank Road	No	0	0	0	0	0	0	0	0	0	0	0	0
45	Irish Buffalo Greenway Outfall	No	0	0	0	0	0	0	0	0	0	0	0	0
46	Mount Olivet Road	No	0	0	0	0	0	0	0	0	0	0	0	0
47	Upper Rocky River Outfall	No	0	0	0	0	0	0	0	0	0	0	0	0
48	Kentucky Street Local Collector	Yes	893,025	0	0	893,025	0	0	0	0	0	0	0	0
49	Brantley Road Force Main	No	0	0	0	0	0	0	0	0	0	0	0	0
50	Midlake Road Lift Station Expansion	No	0	0	0	0	0	0	0	0	0	0	0	0
51	Brantley Road Lift Station Expansion	No	0	0	0	0	0	0	0	0	0	0	0	0
52	Three Mile Branch Outfall	No	0	0	0	0	0	0	0	0	0	0	0	0
53	Summit Ridge Lane	No	0	0	0	0	0	0	0	0	0	0	0	0
54	Centergrove Road	No	0	0	0	0	0	0	0	0	0	0	0	0
55	New Gilead Extension	No	0	0	0	0	0	0	0	0	0	0	0	0
56	WSACC RRRWWTP 30 to 34 MGD	No	0	0	0	0	0	0	0	0	0	0	0	0
57	WSACC RRRWWTP 34 to 36 MGD	No	0	0	0	0	0	0	0	0	0	0	0	0
58	WSACC RRRWWTP 36 to 45 MGD	No	0	0	0	0	0	0	0	0	0	0	0	0
59	WSACC RRRWWTP 45 to 54 MGD	No	0	0	0	0	0	0	0	0	0	0	0	0
60	WSACC Interceptor Improvements - 2030	No	0	0	0	0	0	0	0	0	0	0	0	0
61	WSACC Interceptor Improvements - 2040	No	0	0	0	0	0	0	0	0	0	0	0	0
62	WSACC Interceptor Improvements - 2050	No	0	0	0	0	0	0	0	0	0	0	0	0
63	WSACC Interceptor Improvements - Watchlist	No	0	0	0	0	0	0	0	0	0	0	0	0
64	Landis-Kannapolis WWTP (.800 MGD)	Yes	29,150,100	0	0	29,150,100	0	0	0	0	0	0	0	0
65	SRU Kannapolis Crossing LS Improvements (.317 MGD)	Yes	6,059,340	0	0	6,059,340	0	0	0	0	0	0	0	0
66	Ongoing Lift Station Maintenance	Yes	1,597,374	0	0	82,688	170,336	175,446	180,710	186,131	191,715	197,466	203,390	209,492
67	Annual Sewer Inspection	Yes	2,128,079	0	0	209,475	215,759	222,232	228,899	235,766	242,839	250,124	257,628	265,357
68	Annual Sewer Rehabilitation	Yes	13,965,498	0	525,000	1,323,000	1,362,690	1,403,571	1,445,678	1,489,048	1,533,720	1,579,731	1,627,123	1,675,937
69	GIS Survey and Update	Yes	50,512	0	0	0	0	23,393	0	0	0	0	27,119	0
70	Public Works Operations Center	Yes	1,543,500	0	0	1,543,500	0	0	0	0	0	0	0	0
71	Total Sewer CIP		\$ 61,599,391	\$ 275,000	\$ 525,000	\$ 45,198,091	\$ 1,748,785	\$ 1,824,642	\$ 1,855,287	\$ 1,910,945	\$ 1,968,274	\$ 2,027,321	\$ 2,115,260	\$ 2,150,786
72	Total Water & Sewer System CIP		\$188,016,439	\$ 275,000	\$ 1,463,700	\$ 46,300,591	\$ 20,548,229	\$ 16,226,447	\$ 5,469,482	\$ 24,055,573	\$ 5,802,573	\$ 21,181,562	\$ 40,352,654	\$ 6,340,628

Line	Description	System Allocation		Total	Percentage Allocation ⁽¹⁾			Allocation Amount		
		System	Project Type		Capacity Expansion	R&R	Other	Capacity Expansion	R&R	Other
	SYSTEM PROJECTS									
Water										
1	Charlotte Water Interconnect - Summers Walk (0.5 MGD)	Water	Transmission	\$ 413,700	100.00%	0.00%	0.00%	\$ 413,700	\$ 0	\$ 0
2	Mountain Vine Waterline	Water	Transmission	0	0.00%	0.00%	100.00%	0	0	0
3	Copper Creek Trail Waterline	Water	Transmission	0	0.00%	0.00%	100.00%	0	0	0
4	Dovefield Lane Waterline	Water	Transmission	0	0.00%	0.00%	100.00%	0	0	0
5	Jim Johnson Rd Waterline	Water	Transmission	1,023,437	100.00%	0.00%	0.00%	1,023,437	0	0
6	Canton Drive Waterline	Water	Transmission	0	0.00%	0.00%	100.00%	0	0	0
7	16" Connection under Railroad Tracks Downtown	Water	Transmission	2,076,115	100.00%	0.00%	0.00%	2,076,115	0	0
8	Charlotte Water Connection - Davidson Rd (1.0 MGD)	Water	Transmission	8,012,320	100.00%	0.00%	0.00%	8,012,320	0	0
9	Crusader Way Water Connection at Gibraltar Street	Water	Transmission	0	0.00%	0.00%	100.00%	0	0	0
10	East of 85 Waterline Installtions, Phase 1	Water	Transmission	0	100.00%	0.00%	0.00%	0	0	0
11	Glenn Ave Waterline - Segment 1 (24")	Water	Transmission	7,266,987	100.00%	0.00%	0.00%	7,266,987	0	0
12	Tucker Ave Waterline	Water	Transmission	0	0.00%	0.00%	100.00%	0	0	0
13	3 Sisters Water Connection at Trinity Church Rd	Water	Transmission	0	100.00%	0.00%	0.00%	0	0	0
14	Biscayne Drive connection to Archdale, etc.	Water	Transmission	3,708,971	0.00%	0.00%	100.00%	0	0	3,708,971
15	Glenn Ave Waterline - Segment 2 (24")	Water	Transmission	0	100.00%	0.00%	0.00%	0	0	0
16	East of 85 Waterline Installtions, Phase 2	Water	Transmission	0	100.00%	0.00%	0.00%	0	0	0
17	Glenn Ave Waterline - Segment 3 (16")	Water	Transmission	0	100.00%	0.00%	0.00%	0	0	0
18	New Downtown Elevated Tank (north side, 1 MG)	Water	Transmission	15,204,913	100.00%	0.00%	0.00%	15,204,913	0	0
19	Spring Valley / Hardwood Lane FH Line	Water	Transmission	0	0.00%	0.00%	100.00%	0	0	0
20	Odell School Rd Watermain Extension	Water	Transmission	0	100.00%	0.00%	0.00%	0	0	0
21	Salisbury Connection (2 MGD)	Water	Treatment	28,339,061	100.00%	0.00%	0.00%	28,339,061	0	0
22	Shiloh BPS Upgrade, Phase 1	Water	Treatment	0	100.00%	0.00%	0.00%	0	0	0
23	WTP Feed to Kannapolis Parkway, Option 1	Water	Treatment	0	100.00%	0.00%	0.00%	0	0	0
24	WTP High Service Pump Upgrade	Water	Treatment	0	100.00%	0.00%	0.00%	0	0	0
25	Odell School Rd Activity Center Water Main Extension	Water	Transmission	0	100.00%	0.00%	0.00%	0	0	0
26	Shiloh BPS Upgrade, Phase 2	Water	Treatment	0	100.00%	0.00%	0.00%	0	0	0
27	Albemarle WTP Expansion (2 MGD)	Water	Treatment	0	100.00%	0.00%	0.00%	0	0	0
28	Northwest Service District Elevated Storage Tank	Water	Transmission	0	100.00%	0.00%	0.00%	0	0	0
29	Off-Stream Raw Water Storage from Coddle Creek Reservoir	Water	Treatment	0	100.00%	0.00%	0.00%	0	0	0
30	WTP Rehab, Phase 1 - PFAS Removal	Water	Treatment	16,039,997	0.00%	100.00%	0.00%	0	16,039,997	0
31	WTP Rehab, Phase 2 - General (Part A)	Water	Treatment	1,623,872	100.00%	0.00%	0.00%	1,623,872	0	0
32	WTP Rehab, Phase 2 - General (Part B)	Water	Treatment	6,700,717	50.00%	50.00%	0.00%	3,350,359	3,350,358	0
33	WTP Rehab, Phase 2 - General (Part C)	Water	Treatment	5,830,525	100.00%	0.00%	0.00%	5,830,525	0	0
34	WTP Rehab, Phase 2 - General (Part D)	Water	Treatment	0	50.00%	50.00%	0.00%	0	0	0
35	WTP Rehab, Phase 2 - General (Part E)	Water	Treatment	0	50.00%	50.00%	0.00%	0	0	0
36	NCDOT Project BR-0181	Water	Transmission	526,339	0.00%	100.00%	0.00%	0	526,339	0
37	2-inch Water Main Replacement	Water	Transmission	29,650,094	0.00%	100.00%	0.00%	0	29,650,094	0
SEWER										
38	Forestbrook Force Main	Sewer	Collection	275,000	100.00%	0.00%	0.00%	275,000	0	0
39	Coldwater Creek Outfall	Sewer	Collection	3,406,725	100.00%	0.00%	0.00%	3,406,725	0	0
40	Edinburg Drive	Sewer	Collection	2,530,238	100.00%	0.00%	0.00%	2,530,238	0	0
41	Mallard Pointe Drive	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
42	Three Mile Branch Collector	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
43	Old Plank Road	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
44	Irish Buffalo Greenway Outfall	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
45	Mount Olivet Road	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
46	Upper Rocky River Outfall	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
47	Kentucky Street Local Collector	Sewer	Collection	893,025	100.00%	0.00%	0.00%	893,025	0	0
48	Brantley Road Force Main	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
49	Midlake Road Lift Station Expansion	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
50	Brantley Road Lift Station Expansion	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
51	Three Mile Branch Outfall	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
52	Summit Ridge Lane	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
53	Centergrove Road	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
54	New Gilead Extension	Sewer	Collection	0	100.00%	0.00%	0.00%	0	0	0
55	WSACC RRRWWTP 30 to 34 MGD	Sewer	Treatment	0	100.00%	0.00%	0.00%	0	0	0
56	WSACC RRRWWTP 34 to 36 MGD	Sewer	Treatment	0	100.00%	0.00%	0.00%	0	0	0
57	WSACC RRRWWTP 36 to 45 MGD	Sewer	Treatment	0	100.00%	0.00%	0.00%	0	0	0
58	WSACC RRRWWTP 45 to 54 MGD	Sewer	Treatment	0	100.00%	0.00%	0.00%	0	0	0
59	WSACC Interceptor Improvements - 2030	Sewer	Treatment	0	100.00%	0.00%	0.00%	0	0	0
60	WSACC Interceptor Improvements - 2040	Sewer	Treatment	0	100.00%	0.00%	0.00%	0	0	0
61	WSACC Interceptor Improvements - 2050	Sewer	Treatment	0	100.00%	0.00%	0.00%	0	0	0
62	WSACC Interceptor Improvements - Watchlist	Sewer	Treatment	0	100.00%	0.00%	0.00%	0	0	0
63	Landis-Kannapolis WWTP (.800 MGD)	Sewer	Treatment	29,150,100	100.00%	0.00%	0.00%	29,150,100	0	0
64	SRU Kannapolis Crossing LS Improvements (.317 MGD)	Sewer	Collection	6,059,340	100.00%	0.00%	0.00%	6,059,340	0	0
65	Ongoing Lift Station Maintenance	Sewer	Collection	1,597,374	0.00%	100.00%	0.00%	0	1,597,374	0
66	Annual Sewer Inspection	Sewer	Collection	2,128,079	0.00%	0.00%	100.00%	0	0	2,128,079
67	Annual Sewer Rehabilitation	Sewer	Collection	13,965,498	0.00%	100.00%	0.00%	0	13,965,498	0
68	GIS Survey and Update	Sewer	Collection	50,512	0.00%	100.00%	0.00%	0	50,512	0
69	Public Works Operations Center	Sewer	Collection	1,543,500	0.00%	0.00%	100.00%	0	0	1,543,500
70	Total - All Capital Projects			\$ 188,016,439				\$ 115,455,717	\$ 65,180,172	\$ 7,380,550

Line	Description	System Allocation		Total	Percentage Allocation ^[1]			Allocation Amount					
		System	Project Type		Capacity Expansion	R&R	Other	Capacity Expansion	R&R	Other			
	ALLOCATION OF PROJECTS												
Water													
71	Treatment Projects			\$	58,534,172			\$	39,143,817	\$	19,390,355	\$	0
72	Transmission Projects				67,882,876				33,997,472		30,176,433		3,708,971
73	Total			\$	126,417,048			\$	73,141,289	\$	49,566,788	\$	3,708,971
SEWER													
74	Treatment Projects			\$	29,150,100			\$	29,150,100	\$	0	\$	0
75	Collection Projects				32,449,291				13,164,328		15,613,384		3,671,579
76	Total			\$	61,599,391			\$	42,314,428	\$	15,613,384	\$	3,671,579
Combined													
77	Treatment Projects			\$	87,684,272			\$	68,293,917	\$	19,390,355	\$	0
78	Transmission Projects				67,882,876				33,997,472		30,176,433		3,708,971
79	Collection Projects				32,449,291				13,164,328		15,613,384		3,671,579
80	Grand Total			\$	188,016,439			\$	115,455,717	\$	65,180,172	\$	7,380,550

Notes:

[1] The capital costs are allocated in order to determine the costs that are recoverable from a capacity-related fee. The costs allocated as capacity expansion projects are assumed to be recoverable from such fees. All other capital costs are assumed to either be maintenance-related (R&R) projects or localized projects that do not provide system-wide capacity benefits.

City of Kannapolis, NC

Water & Sewer System Development Fee Study

Appendix C

Water System Development Fee Calculation



WATER & SEWER SYSTEM

WATER CALCULATION OF SYSTEM DEVELOPMENT FEE PER ERU

Line	Description	Total
Recoverable Capital Facilities		
Existing Facilities		
1	Buildings	\$ 25,051,552
2	CIP Projects	11,459,685
3	Distribution/Collection	85,692,289
4	Infrastructure	14,170,036
5	Land	0
6	Major Equipment	0
7	Total Existing Facilities	\$ 136,373,562 ^[1]
8	Less Debt Service Principal	\$ (36,880,966) ^[2]
9	Total Recoverable Existing Assets	\$ 99,492,596
Capital Improvement Program		
10	Total Capital Projects	\$ 126,417,048
11	Unrecoverable Capital Projects	(53,275,759)
12	Total Growth Related Capital Projects	\$ 73,141,289 ^[3]
13	Less: 25.00% CIP Adjustment	(18,285,322) ^[3]
14	Recoverable Capital Projects	\$ 54,855,967
15	Total System Recoverable Assets	\$ 154,348,563
Available System Capacity (MGD)		
Existing Water Capacity (MGD)		
16	City's Water Treatment Plant	15.000 ^[4]
17	Interconnection With Albemarle	2.000 ^[4]
Anticipated Water Capacity (MGD)		
18	Charlotte Water Interconnect - Summers Walk	0.500 ^[4]
19	Charlotte Water Connection - Davidson Rd	1.000 ^[4]
20	Salisbury Connection	2.000 ^[4]
21	WTP Rehab, Phase 2	1.000 ^[4]
22	Total System Capacity (MGD)	21.500 ^[5]
Capacity Adjustment		
23	Water Loss Adjustment	15.0% ^[6]
24	Estimated Capacity (MGD)	18.275

WATER & SEWER SYSTEM

WATER CALCULATION OF SYSTEM DEVELOPMENT FEE PER ERU

Line	Description	Total
Total Estimated Capacity (ERUs)		
25	Assumed Standard Level of Service Per ERU (gpd)	400 ^[7]
26	Total ERU Capacity (Total System Capacity/LOS per ERU)	45,688
Calculation of System Development Fee per ERU		
27	Estimated Cost per Gallon of Capacity	\$ 8.45
28	Calculated SDF per ERU	\$ 3,378
29	Less Rounding Adjustment	(78)
30	Calculated SDF per ERU (Rounded)	\$ 3,300

Notes:

- [1] See **Appendix A** for the development of existing asset costs identified for capital recovery.
- [2] Based upon discussions with Utility staff, a portion of the facilities included for cost recovery in this analysis were funded with debt. In an effort to account for the facility costs that may be recovered from user rates as part of the normal budgetary process, a debt service credit is applied to the applicable fee calculation. The credit is equal to the outstanding principal amount on existing utility-related debt as provided by City staff. The principal balance is allocated between water and wastewater as provided in **Appendix A**.
- [3] See **Appendix B** for the development of growth-related capital improvement costs in accordance with the CIP and capital projects included for recovery. An additional CIP credit is applied equal to 25% of the growth-related capital improvements. This adjustment is made in accordance with House Bill 436, § 162A-207.
- [4] The available and anticipated maximum day water capacity amounts were provided by the City staff.
- [5] Reflects the total combined maximum day water capacity available to serve water customers, prior to limiting factor adjustments, as applicable.
- [6] An adjustment is made for assumed unaccounted-for water flows (i.e. line losses) in the system. For the purpose of this analysis, the line-loss factor is assumed to be 15.00% based on discussions with City staff.
- [7] The system development charges are to be applied on an equivalent residential unit (ERU) basis such that 1 ERU is equal to the estimated capacity requirements for a typical single family residential connection with a 5/8-inch X 3/4-inch water meter. In accordance with daily water flow requirements adopted by the State of North Carolina and defined the North Carolina Administrative Codes (15A NCAC 18C .0409), the level of service requirement for a residential connection is 400 gallons per day (gpd). Applying the NCAC flow standard, it is assumed that 1 ERU requires a standard level of service of 400 gpd.

City of Kannapolis, NC

Water & Sewer System Development Fee Study

Appendix D

Sewer System Development Fee Calculation



WATER & SEWER SYSTEM

SEWER CALCULATION OF SYSTEM DEVELOPMENT FEE PER ERU

Line	Description	Total
Recoverable Capital Facilities		
Existing Facilities		
1	Buildings	\$ 1,754,327
2	CIP Projects	6,866,773
3	Distribution/Collection	47,413,553
4	Infrastructure	10,782,469
5	Land	0
6	Major Equipment	0
7	Total Existing Facilities	\$ 66,817,122 ^[1]
8	Less Debt Service Principal	\$ (23,809,764) ^[2]
9	Total Recoverable Existing Assets	\$ 43,007,358
Capital Improvement Program		
10	Total Capital Projects	\$ 61,599,391
11	Unrecoverable Capital Projects	(19,284,963)
12	Total Growth Related Capital Projects	\$ 42,314,428 ^[3]
13	Less: 25.00% CIP Adjustment	(10,578,607) ^[3]
14	Recoverable Capital Projects	\$ 31,735,821
15	Total System Recoverable Assets	\$ 74,743,179
Available System Capacity (MGD)		
Existing Sewer Capacity (MGD)		
16	Available Capacity From WSACC	4.290 ^[4]
17	Distribution 14	1.691 ^[4]
Anticipated Sewer Capacity (MGD)		
18	Kannapolis Portion of 2027 WSACC WWTP Expansion	0.950 ^[4]
19	Landis-Kannapolis WWTP (.800 MGD)	0.800 ^[4]
20	SRU Kannapolis Crossing LS Improvements (.317 MGD)	0.317 ^[4]
21	Total System Capacity (MGD)	8.048
Capacity Adjustment		
22	I&I Adjustment	6.40% ^[5]
23	Estimated Capacity (MGD)	7.533
Total Estimated Capacity (ERUs)		
24	Assumed Standard Level of Service Per ERU (gpd)	263 ^[6]
25	Total ERU Capacity (Total System Capacity/LOS per ERU)	28,643

WATER & SEWER SYSTEM

SEWER CALCULATION OF SYSTEM DEVELOPMENT FEE PER ERU

Line	Description	Total
Calculation of System Development Fee per ERU		
26	Estimated Cost per Gallon of Capacity	\$ 9.92
27	Calculated SDF per ERU	\$ 2,604
28	Less Rounding Adjustment	(4)
29	Calculated SDF per ERU (Rounded)	\$ 2,600

Notes:

- [1] See **Appendix A** for the development of existing asset costs identified for capital recovery.
- [2] Based upon discussions with Utility staff, a large portion of the facilities included for cost recovery in this analysis were funded with debt. In an effort to account for the facility costs that may be recovered from user rates as part of the normal budgetary process, a debt service credit is applied to the applicable fee calculation. The credit is equal to outstanding principal amount on existing utility-related debt as provided by City staff. The principal balance is allocated between water and wastewater as provided in **Appendix A**.
- [3] See **Appendix B** for the development of growth-related capital improvement costs in accordance with the CIP and capital projects included for recovery. An additional CIP credit is applied equal to 25% of the growth-related capital improvements. This adjustment is made in accordance with House Bill 436, § 162A-207.
- [4] As a member of the Water and Sewer Authority of Cabarrus County (WSACC), the City has wastewater treatment capacity as contracted. The available and anticipated capacity amounts were provided by the City staff.
- [5] For the purpose of this analysis, it is assumed that the wastewater system capacity is reduced by the impacts of system inflow and infiltration (I&I). The assumed I&I adjustment of 6.40% is based on discussions with City staff.
- [6] Similar to the water system, the system development charges for wastewater are to be applied on an equivalent residential unit (ERU) basis such that 1 ERU is equal to the estimated capacity requirements for a typical single family residential connection with a 5/8-inch X 3/4-inch water meter. In accordance with wastewater flow design standards adopted by the State of North Carolina and defined the North Carolina Administrative Codes (15A NCAC 02T .0114), the level of service (LOS) requirement is based on 75 gallons of capacity per day per bedroom for a residential home. The analysis provided herein utilizes the City's implied LOS standard. The City stated that their permitting requires 75 GPD per bedroom and that at least 50% of the new homes being built currently have 4 bedrooms. Due to the increase in bedrooms per home being built, it is assumed that the average household has 3.5 bedrooms, resulting in a LOS of 263 gpd. This better reflects the mix of residential construction currently being seen by the City and they expect the building of larger homes to continue in the future.

City of Kannapolis, NC

Water & Sewer System Development Fee Study

Appendix E

Summary of Calculated
System Development Fees



WATER & SEWER SYSTEM

SUMMARY OF CALCULATED SYSTEM DEVELOPMENT FEES

Line	Description	Meter- Based ERU Factor	Fees by System			Combined Fee
			Water	Sewer	WSACC ^[2]	
	EXISTING FEES					
Meter Size:						
1	5/8 Inch		\$ 1,350	\$ 1,000	\$ 2,968	\$ 5,318
2	3/4 Inch		\$ 1,350	\$ 1,000	\$ 2,968	\$ 5,318
3	1.0 Inch		\$ 3,000	\$ 1,625	\$ 4,947	\$ 9,572
4	1.5 Inch		\$ 6,000	\$ 3,250	\$ 9,893	\$ 19,143
5	2.0 Inch		\$ 9,600	\$ 5,200	\$ 15,829	\$ 30,629
6	3.0 Inch		\$ 18,000	\$ 9,750	\$ 31,659	\$ 59,409
7	4.0 Inch		\$ 30,000	\$ 16,250	\$ 49,467	\$ 95,717
8	6.0 Inch		\$ 60,000	\$ 32,500	\$ 98,933	\$ 191,433
9	8.0 Inch		\$ 96,000	\$ 52,000	\$ 158,293	\$ 306,293
10	10.0 Inch		\$ 138,000	\$ 74,000	\$ 415,520	\$ 627,520
	CALCULATED FEES	[1]				
Meter Size:						
11	5/8 Inch	1.00	\$ 3,300	\$ 2,600	\$ 2,968	\$ 8,868
12	3/4 Inch	1.00	\$ 3,300	\$ 2,600	\$ 2,968	\$ 8,868
13	1.0 Inch	2.50	\$ 8,250	\$ 6,500	\$ 4,947	\$ 19,697
14	1.5 Inch	5.00	\$ 16,500	\$ 13,000	\$ 9,893	\$ 39,393
15	2.0 Inch	8.00	\$ 26,400	\$ 20,800	\$ 15,829	\$ 63,029
16	3.0 Inch	15.00	\$ 49,500	\$ 39,000	\$ 31,659	\$ 120,159
17	4.0 Inch	25.00	\$ 82,500	\$ 65,000	\$ 49,467	\$ 196,967
18	6.0 Inch	50.00	\$ 165,000	\$ 130,000	\$ 98,933	\$ 393,933
19	8.0 Inch	80.00	\$ 264,000	\$ 208,000	\$ 158,293	\$ 630,293
20	10.0 Inch	115.00	\$ 379,500	\$ 299,000	\$ 415,520	\$ 1,094,020
	OPTIONAL ACTUAL FLOW BASIS	[3]				
21	Cost Per Gallon of Capacity (GPD)		\$ 8.45	\$ 9.92	N/A	\$ 18.37

Notes:

- [1] The calculated system development fees are based on the calculated fee per ERU as applied to the respective ERU factor. The methodology for incrementing the charges for larger connection sizes is based on standardized demand criteria established by the American Water Works Association (AWWA) and the Water Environment Federation (WEF) pursuant to the size of the water meter. Such factors are commonly applied consistently for both water and sewer fee calculations.
- [2] Represents the existing FY2026 System Development Fees applied by WSACC for the recovery of wastewater treatment facility costs. These fees are independent of the City's fees and will be charged in addition to the City's fees. The City of Kannapolis has no involvement in the setting of WSACC's fees and they are provided for informational purposes only.
- [3] In situations where the application of the meter-based fees will result in the collection of fees significantly different than the potential demand requirement, a special fee calculation methodology may be applied based on the unit cost of capacity and the estimated daily capacity needs of the new service connection. The estimated capacity needs will be based on the amount determined by the utility's engineering staff to be appropriate.



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