April 7, 2021

Mr. Joe Albright, Utility Director
City of Gastonia/Two Rivers Utilities
PO Box 1748
Gastonia, NC 28052

Subject: FY 2021 Water and Wastewater System Development Fee Study

Dear Mr. Albright,

WILLDAN FINANCIAL SERVICES ("Willdan") is pleased to submit to the City of Gastonia/Two Rivers Utilities, North Carolina (hereinafter the "City") the Water and Wastewater System Development Fee Study report (the "Report") for your consideration. We have completed the analyses for the review and development of water and wastewater system development fees and have summarized the results herein.

GENERAL

System development fees ("SDF" or "SDFs") and other comparable charges are often referred to by a number of different 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. In general, an SDF is a one-time charge implemented to recover (in whole or part) the costs associated with capital investments made by a utility system to make service available to future users of the system. Such capital costs generally include the construction of facilities as well as engineering, surveys, land, financing, legal and administrative costs. It has become common practice for water and wastewater utility systems to implement SDF (or other similar charges) in order to establish a supplemental 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. It should also be noted that as part of its overall capital improvement plan (CIP), the City plans extensive water and sewer system improvements in the Southeast and Southwest growth corridor of its service area. Accordingly, and as further detailed in the CIP portion of this Report, the evaluation of SDFs herein includes a separate analysis for the Southeast and Southwest Development Areas specifically related to wastewater.

CRITERIA FOR SYSTEM DEVELOPMENT FEES

The purpose of a SDF is to assign, to the extent practical, 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. Generally, 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 directly 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 use (*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.

LEGAL CONSIDERATIONS

Court Proceedings - General

Generally, courts throughout the United States have found that capacity-related fees associated with new customer connections to utility systems are legal as long as they meet a Rational Nexus Test. In accordance with common court rulings, the rational nexus test requires that certain conditions be met in order to have 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 as a result 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; and

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 – 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 different factors influencing this decision, the result generated a significant amount of confusion and concern for governmental utility systems within the State.

House Bill 436

In 2017, the General Assembly of North Carolina 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 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 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 10 years nor more than 20 years.
8. Is adopted by resolution or ordinance of the local governmental unit in accordance with G.S. 162A-209.

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 address the legal requirements set forth above to develop fees in accordance with Chapter 162A.

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 possible modifications or revisions to the analysis.
2. Following expiration of the 45 days 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 shall be updated at least every five years.

EXISTING SDFs

The City currently imposes System Development Fees to new customers requiring water and/or wastewater utility service which are based on the System Development Fee study performed for the City in 2018 (the "2018 SDF Study") in order to comply with HB 436. The City relied upon the calculated fees developed in the 2018 SDF Study but implemented SDFs that were 30 percent lower than those calculated in the 2018 SDF Study, with the exception of the wastewater SDFs developed for the Southeast Development Area which included no discount.

EXISTING TAP FEES

The City currently imposes tap fees to new customers connecting to the water and wastewater systems. However, it is important to note that such tap-related fees are different than the SDFs developed and proposed herein. The distinguishing characteristic is that the tap fees are established for the purpose of recovering the operating costs associated with performing the customer service act of physically making a new system tap/connection (*i.e.*, labor and benefits, equipment, vehicles, materials and supplies, etc.) SDFs, on the other hand, are established for the purpose of recovering the major capital costs incurred in making water and wastewater utility service available to the general public. The proposed fees designed herein are intended to be in addition to the existing tap fees. As such, it is proposed that the existing tap fees continue to be imposed. It should be noted that, for the purpose of the Report, the existing tap fees are assumed to recover the costs associated with these items. A review of these fees in relation to actual costs incurred is beyond the scope of this Report.

EXISTING & PROJECTED CAPITAL FACILITIES

Existing Facilities – Buy-In Method

In considering the recovery of existing asset costs under the buy-in method, the general concept is that new customers "buy" a proportionate share of system capacity at the value of the existing facilities. 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.

While there are different methods that can be used to establish a value to the existing facilities, a common approach is to value the existing assets at a replacement cost amount. According to the replacement cost method, the existing system components are valued at the estimated current cost of replacing the facilities. The analysis developed herein uses an approach referred to as Replacement Cost New Less Depreciation (RCNLD). Applying the RCNLD method, the original costs are escalated to current dollars through the use of construction cost indices, and then the result is adjusted down for the accumulated depreciation, which is also adjusted by the construction cost indices. This approach 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 wastewater system facilities (the "Asset Listing"). The Asset Listing contained the original cost, the date placed in service and the accumulated depreciation for each asset. The replacement cost of each asset is estimated by using construction cost indices information contained in the Handy-Whitman Index of Public Utility Construction Costs for the South Atlantic Region. The Handy-Whitman Index calculates the cost trends for different types of utility construction, including water systems. The published indices are 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 reproduction cost at prices prevailing at a certain date or to the present. While many general construction cost indexes are published, 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. The result is the RCNLD.

For the purpose of SDF analyses, the existing assets are categorized based on the major components of **Treatment** and **Transmission**. The treatment category includes the treatment plant facilities (water and wastewater) and accompanying supply and storage facilities (water only), as well as wastewater effluent disposal facilities. The transmission/collection category consists of major water mains, water pumping facilities, sewer lift stations and collection lines. Since the localized distribution and collection facilities are generally contributed by developers or funded from other sources (*i.e.*, assessments, direct customer payments, etc.), these facilities are not included for recovery through the SDFs. Additionally, a cost limit or threshold has been set at $100,000 as a condition of inclusion of the asset items in the SDF calculation. The cost limit is

based on the assumption that any asset item that costs less than the limit amount is not a major facility that provides a system-wide benefit. The asset data and applicable recoverable cost allocations are provided in **Exhibit 1** at the end of this Report. The existing recoverable water and wastewater capital asset cost allocations included in the analysis are summarized in **Table 1**.

TABLE 1
SUMMARY OF EXISTING RECOVERABLE FACILITIES

Description	RCNLD Included for Recovery		
	Water	Wastewater	Total
Total Recoverable Assets:			
Buildings	$ 8,234,577	$ 51,670,710	$ 59,905,287
Equipment	1,983,596	5,485,998	7,469,594
Improvements	2,794,816	402,471	3,197,287
Infrastructure	139,226,311	87,346,370	226,572,681
Land	14,794,766	4,931,589	19,726,355
Vehicles	0	0	0
Total	$ 167,034,066	$ 149,837,138	$ 316,871,204

Capital Improvements Program – Incremental Cost Method

In considering the recovery of future asset costs under the incremental cost method, 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 method, Chapter 162A requires a minimum 10-year capital improvements program ("CIP") that identifies the costs associated with new capacity and the timing of the expenditures. It is also important 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 since these are costs that are not incurred by the utility.

The SDFs developed herein utilize the incremental cost method and therefore includes future capital improvement projects and their applicable additions to system capacity. The City has prepared a CIP that provides a listing of individual ongoing projects for the current fiscal year 2021 and for those projects anticipated for the future fiscal years 2022 through 2031 (*i.e.*, a 11-year CIP). The CIP is provided in **Exhibit 2**. Similar to 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, and include the wastewater-related costs associated with the Southeast and Southwest Development Areas, whose wastewater fees are calculated separately system-wide wastewater fees in this analysis. 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. Additionally, the City has certain on-going projects defined herein as Construction-Work-In-Progress, or CWIP, which have also been included in the CIP shown in **Exhibit 2**. These are capital projects that have not yet been fully completed and thus are not projects included in the City's Asset Listing or part of the City formal CIP, but are assets that all or a portion of which can be included as recoverable assets in the calculation of the water and wastewater SDFs. The CIP and resulting identification of assumed growth-related projects (*i.e.*, project costs recoverable from SDFs) are provided in **Exhibit 3**. The Exhibit also provides a summary allocation of the recoverable costs between the treatment and transmission components. The projected growth-related projects and associated capital costs included in the analysis are summarized in **Table 2**.

TABLE 2
SUMMARY OF THE CIP

Description	Recoverable Capital	Excluded Capital [1]	Total CIP
System-Wide Recoverable Assets - Water:			
Treatment Facilities	$ 65,488,872		
Transmission Facilities	6,652,667		
Total	$ 72,141,539		
System-Wide Recoverable Assets - Wastewater:			
Treatment Facilities	$ 0		
Transmission Facilities	$ 1,008,423		
Total	$ 1,008,423		
SE Development Area Recoverable Assets - Wastewater:			
Treatment Facilities	$ 0		
Transmission Facilities	$ 50,031,249		
Total	$ 50,031,249		
SW Development Area Recoverable Assets - Wastewater:			
Treatment Facilities	$ 0		
Transmission Facilities	$ 12,735,000		
Total	$ 12,735,000		
Recoverable Assets - Combined:			
Treatment Facilities	$ 65,488,872		
Transmission Facilities	70,427,339		
Total	$ 135,916,211	$ 50,668,749	$ 186,584,960

Note:

[1] Excluded Capital reflects those projects which are not growth-related in nature as indicated by City staff. See Exhibit 3 for those capital items that have been excluded.

Total System-Wide Facilities Under Combined Method

The analysis developed herein for calculation of the SDFs proposes the combined method. As the name implies, the combined method 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 method assumes that the utility capacity within the existing system is sufficient to serve near-term growth, but will require additional capacity to serve future growth needs. Using this method, new customers pay an SDF that reflects the value of both existing and planned capacity. The combined system costs included for recovery in the development of system-wide water and wastewater fees are summarized in **Table 3** and exclude the transmission related facilities for the Southeast and Southwest Development Areas. As discussed previously, the transmission portion of the wastewater fees for the Southeast and Southwest Development Area are calculated separately herein since the transmission-related capital costs required to serve those growth areas can be isolated and are specific to serving new growth in those areas.

TABLE 3
SUMMARY OF COMBINED RECOVERABLE FACILITIES (SYSTEM-WIDE)

Description	Recoverable Facilities		
	Water	Wastewater	Total
Existing Facilities:			
Treatment Facilities	$ 27,807,755	$ 62,490,768	$ 90,298,523
Transmission Facilities	139,226,311	87,346,370	226,572,681
Subtotal	$ 167,034,066	$ 149,837,138	$ 316,871,204
Capital Improvement Program:			
Treatment Facilities	$ 65,488,872	$ 0	$ 65,488,872
Transmission Facilities	6,652,667	1,008,423	7,661,090
Subtotal	$ 72,141,539	$ 1,008,423	$ 73,149,962
Combined:			
Treatment Facilities	$ 93,296,627	$ 62,490,768	$ 155,787,395
Transmission Facilities	145,878,978	88,354,793	234,233,771
Total	$ 239,175,605	$ 150,845,561	$ 390,021,166

DEBT SERVICE CREDIT

It is common practice for utilities to fund major capital improvements and expansion projects with debt (*i.e.*, bond issues). Generally, 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). In order to reduce the potential for new customers to pay twice for capital facilities (*i.e.*, paying an SDF and then paying for debt service

on expansion projects in their monthly user rates), the SDF analysis developed herein includes a debt service credit. This credit is equal to the outstanding principal remaining on all utility-related debt. The debt credit amount is allocated between water and wastewater, and further between transmission and treatment, based on information provided by City staff and is allocated based on the capital projects that were funded from proceeds of each individual debt issuance. The debt service credit meets the requirements of Chapter 162A and is utilized in the development of the proposed SDFs as discussed in the following section. A summary of the combined recoverable capital facilities, as adjusted for the debt service credit, is provided in **Table 4**.

TABLE 4
SUMMARY OF NET RECOVERABLE FACILITIES FOR SYSTEM-WIDE FEES

Description	Net Recoverable Facilities		
	Water	Wastewater	Total
Combined Facilities:			
Treatment Facilities	$ 93,296,627	$ 62,490,768	$ 155,787,395
Transmission Facilities	145,878,978	88,354,793	234,233,771
Subtotal	$ 239,175,605	$ 150,845,561	$ 390,021,166
Less Debt Service Principal:			
Treatment Facilities	$ (46,065,000)	$ (1,597,655)	$ (47,662,655)
Transmission Facilities	(2,375,156)	(5,331,665)	(7,706,822)
Subtotal	$ (48,440,156)	$ (6,929,321)	$ (55,369,477)
Net Capital Costs:			
Treatment Facilities	$ 47,231,627	$ 60,893,113	$ 108,124,740
Transmission Facilities	143,503,822	83,023,128	226,526,949
Net Recoverable Costs	$ 190,735,449	$ 143,916,240	$ 334,651,689

SYSTEM CAPACITIES

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. In order 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 water and wastewater treatment capacities as well as estimating the capacities of the major transmission facilities. Due to the regulatory and design requirements for water and wastewater treatment plants, the capacity of treatment facilities is generally well documented. However, the volumetric capacity of the major transmission facilities is often more difficult to determine. For this reason, in performing an analysis of this nature, the assumed

capacity of the transmission facilities is commonly based on a factor of the associated treatment capacities. In developing the estimated amount of capacity for each respective category, the analysis relies on information provided by the City and included in master planning documents, as well as assumptions based on common industry standards.

Water Treatment

The City currently owns and operates water treatment facilities with a peak design capacity of 27.3 MGD (million gallons per day). While the permitted flow capacity is provided in terms of the maximum daily flow amount, the development and application of SDFs are based on average flow requirements. As such, it is necessary to convert the maximum daily flow (MDF) capacity to an estimated average daily flow (ADF) capacity. Pursuant to general industry standards and discussions with staff, it is assumed herein that the rated MDF is approximately 1.5 times the available capacity on an ADF basis. Applying this factor to the rated capacity for the water treatment plant and other water supply sources results in an average daily flow capacity of 18.20 MGD. An additional adjustment is made 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 18.0% to adjust for the unaccounted-for water flows at the treatment plant. This final adjustment results in an assumed average daily treatment plant capacity of 14.92 MGD.

Water Transmission

Unlike the treatment facilities, the capacity information for major transmission facilities is very difficult to determine and quantify. Such transmission capacity estimates are typically not even developed in engineering documents such as master plans or Consulting Engineer's Reports. Based on discussions with City staff, it is assumed that the water transmission facilities are capable of providing average water flow at least equal to 2.00 times the adjusted water treatment capacity, resulting in 29.84 MGD.

Wastewater Treatment

Due to the regulatory and design requirements for wastewater treatment plants, the capacity of treatment facilities is generally well documented. The wastewater treatment facilities are designed and permitted in accordance with published hydraulic standards adopted by Section 15A NCAC 02T .0114 of the North Carolina Administrative Code regulations. The City owns and operates three wastewater treatment facilities, including the Long Creek, Crowders Creek, and Eagle Road treatment facilities with a combined permitted capacity of 26.00 MGD.

Unlike the application for water, the wastewater treatment capacity is permitted at average daily flow levels. As such, it is not necessary to convert the capacity. However, as with the line loss in the water system, the wastewater system is impacted by inflow and infiltration (I&I) into the wastewater collection facilities. In essence, the impact of I&I reduces the level of capacity that is available for use by existing and future system customers. Pursuant to discussions with staff, the

ADF for wastewater treatment is adjusted for an assumed I&I impact of 25.00%, resulting in an adjusted average daily capacity of 19.50 MGD.

Wastewater Transmission

Similar to the discussion provided previously for the determination of water transmission capacity, it is difficult to identify the capacity of the wastewater transmission facilities. Although an exact capacity number is difficult to determine, for the purpose of this analysis it is assumed that the wastewater trunk lines and pumping facilities are designed to provide capacity at least equal to 2.00 times the permitted plant flow (as adjusted for I&I), or 39.00 MGD.

DEVELOPMENT OF SYSTEM-WIDE SDFs

The methodology utilized herein for developing the system-wide water and wastewater SDFs relies upon the cost of 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 are $7.98 per gallon of water capacity (combined treatment and transmission). Additionally, it is estimated that the combined treatment and transmission-related wastewater facility costs are $5.25 per gallon of wastewater capacity. These unit costs would be applicable to new water and wastewater connections system wide. As discussed previously, the cost for wastewater is exclusive of wastewater capital costs for the Southeast Development Area.

In developing the SDFs, the unit costs per gallon of capacity are applied to a common Level of Service (LOS) standard in order to establish the applicable fee per Equivalent Residential Unit (ERU). For purposes of applying the LOS, an ERU is representative of a single-family residential dwelling unit receiving water service from a 5/8x3/4-inch metered connection and discharging normal domestic-strength wastewater through a comparably sized sewer connection. Based on common industry standards for the development and application of capacity-related charges, a typical residential water connection is generally assumed to require average service availability in the range of 350 to 450 gallons of water per day (gpd) of system capacity. In order to establish an applicable LOS for system capacity, this analysis relies upon flow standards established by the State of North Carolina (the "State") 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 level of service requirement for a residential connection is 400 gallons per day (gpd). However, it is assumed that this level of service is a maximum day usage and was divided by 1.5 to calculate an average day usage number, resulting in a standard level of service of 267 gpd of water system capacity. Applying this flow standard, it is assumed that 1 ERU requires a standard level of service of 267 gpd of water system capacity.

Similar to the water system, the SDFs 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. According to the

wastewater flow design standards adopted by the State and defined the North Carolina Administrative Codes (15A NCAC 02T .0114), the level of service requirement would be based on 120 gallons of capacity per day per bedroom for a residential home. Assuming an average of 3.0 bedrooms per new home constructed, applying the State's flow standard to the average number of bedrooms, 1 ERU would result in a standard level of service of 360 gpd of wastewater system capacity. However, the City has advised that they have received approval from the State of North Carolina Department of Environmental Quality ("NCDEQ") to have their standard LOS for sewer reduced for sewer permitting from the 120 gallons per bedroom per day to a lower amount. The City's engineering consultant provided a report that was submitted to NCDEQ for review and, subsequently, the NCDEQ approved using 150 gpd for 1 & 2-bedroom dwelling units with an additional 75 gpd for additional bedrooms. The City has assumed an average of 3.5 bedrooms per new home construction, resulting in a sewer LOS of 263 gallons per day.

Applying the average day LOS amounts as discussed previously to the estimated unit costs per gallon of capacity, and adjusting for the applicable debt service credits, results in calculated system-wide water and wastewater SDFs of $2,120 and $1,380, respectively, for a typical single-family residential connection (*i.e.*, per ERU). The development of the proposed system-wide water and wastewater SDFs is detailed in **Exhibits 4 and 5**, respectively. A summary of the existing and proposed systemwide SDFs for a typical new residential connection is provided in **Exhibit 8**.

SOUTHEAST & SOUTHWEST SDF CALCULATIONS

General

As discussed previously, the wastewater SDFS for the Southeast and Southwest Development Areas has been calculated independent of the system-wide fees due to the large capital costs required to provide wastewater transmission services specific to those areas.

Southeast Development Area

City staff has advised that there is a potential to add approximately 9,000 new wastewater ERUs in the Southeast Development Area. Additionally, the City estimates that the capital costs to provided wastewater service to this area will be approximately $50.3 million. After applying a 25% debt service credit to this capital cost amount, the resulting recoverable assets are approximately $37.5 million. Assuming 9,000 potential ERUs, the resulting transmission related SDF component would be $4,160 per ERU. Combining this transmission component cost to the system-wide treatment capacity cost per ERU of $820 results in a combined SDF of $4,980 per ERU for new wastewater connections in the Southeast Development Area as set forth in **Exhibit 6**. As advised by the City, the water SDF for a new connection in the Southeast Development Area would be the systemwide fee of $2,120 per ERU.

Southwest Development Area

City staff has advised that there is a potential to add approximately 6,000 new wastewater ERUs initially in the Southwest Development Area if the City provided certain wastewater infrastructure needed for new development in that area. The City estimates that the capital costs to provide

wastewater service to serve 6,000 new wastewater ERUs in this area will be approximately $12.7 million. After applying a 25% debt service credit to this capital cost amount, the resulting recoverable assets are approximately $9.55 million. Assuming 6,000 potential ERUs, the resulting transmission related SDF component would be $1,590 per ERU. Combining this transmission component cost to the system-wide treatment capacity cost per ERU of $820 results in a combined SDF of $2,410 per ERU for new wastewater connections in the Southwest Development Area as set forth in **Exhibit 7**. As advised by the City, the water SDF for a new connection in the Southwest Development Area would be the system-wide fee of $2,120 per ERU.

APPLICATION OF SDFs

For the purpose of developing SDFs, the average daily flow number is established as one equivalent residential unit (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. One ERU is equal to the average anticipated flow for a single-family dwelling unit with a standard 5/8 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 incrementing the fees 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. As such, the proposed fees developed herein utilize the meter equivalency methodology currently applied by the City for its existing fees. Since wastewater flow is generally a direct function of water flow, applying the water and wastewater SDFs based upon the size of the water meter is equitable, administratively efficient and consistent with industry standards. The existing and proposed water and wastewater SDFs for system-wide, Southeast and Southwest Development Area new connections equaling 1 ERU are set forth in **Table 5** that follows. A detailed listing of calculated SDFs for all service areas, by meter size, are shown in **Exhibit 8**.

TABLE 5
COMPARISON OF FEES PER ERU

Description	Fee Per Equivalent Residential Unit		
	System-Wide SDFs	Southeast Development Area SDFs	Southwest Development Area SDFs
Existing Fees:			
Water	$ 1,246	$ 1,246	N/A
Wastewater	868	3,150	N/A
Total	**$ 2,114**	**$ 4,396**	**N/A**
Proposed Fees:			
Water	$ 2,120	$ 2,120	$ 2,120
Wastewater	1,380	4,980	$ 2,410
Total	**$ 3,500**	**$ 7,100**	**$ 4,530**
Change from Existing Fees:			
Water	$ 874	$ 874	$ 2,120
Wastewater	512	1,830	$ 2,410
Total	**$ 1,386**	**$ 2,704**	**$ 4,530**

Note:
(1) The City currently charges fees based on meter size. The existing & proposed SDFs above assume one ERU for a 3/4-inch customer.

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 at the discretion of the City's Utilities Director. 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 multiply the calculated unit costs per gallon of capacity, as provided in **Exhibit 8,** by the capacity requirement for the particular 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 may require certified engineering documentation defining the capacity utilization needs for the new customer.

As another example of utilizing a flexible methodology, the City sometimes has new master-metered multi-family connections whereby multiple residential dwelling units receive service through a single, common connection. Such connections generally consist of apartment complexes, patio homes, condominiums, duplexes, triplexes, townhouses, etc. Since the usage characteristics for individual dwelling units within multi-family structures are generally consistent with those of individually metered single-family households, it is common industry practice for

such connections to be represented on a per-unit basis regardless of the size of the master-metered connection. As such, the SDFs for new multi-family connections can be applied based on the number of permitted dwelling units (or a lesser equivalency factor thereof). For example, if it is determined that a new master-metered multi-family development requires less capacity per dwelling unit than a typical residential home, the utility can apply a factor of less than 1 ERU per unit (e.g. 0.80 ERUs per dwelling unit). The resulting number of equivalent units is then multiplied times the SDF per ERU to calculate the total fees to be collected.

COMPARISON WITH NEIGHBORING UTILITIES

In order to provide the City with additional insight regarding the development and application of the SDFs, a comparison of fees imposed by other utility systems in North Carolina has been developed and is shown in **Exhibit 9**. The comparison shows the SDFs of other utilities for a new residential water and wastewater connection that receives service (from the subject utility or other local providers) through a standard residential-sized water meter (representative of 1 ERU) as compared to the City's existing and proposed system-wide fees.

GENERAL ASSUMPTIONS AND 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, fee schedules for other utilities, 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 information used to develop the assumptions applied in the Report differs from actual results, the analyses developed herein could be impacted accordingly.

CONCLUSIONS

This study has found a need for the City to adopt 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 SDFs for new system connections is becoming more 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 proposed herein are developed in accordance with the requirements of Chapter 162A and utilize methodologies that are consistent with industry standards.

5. The proposed SDFs are based on a listing of existing system assets as provided by the City, construction work in progress capital projects, as well as the 10-year capital improvement plan prepared by the City.

6. The water and wastewater LOS standards proposed herein for establishing an ERU basis are based on flow standards utilized by the State as defined in the North Carolina Administrative Code, as adjusted, and the State of North Carolina Department of Environmental Quality and are consistent with common industry standards.

7. The City currently imposes tap fees and other related charges 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 effect on the level or application methodology for these other connection-related fees.

8. The City's monthly user rates and charges for water and wastewater utility service include a surcharge for customers located outside the incorporated limits of the City. However, no such surcharge is proposed for purposes of applying the SDFs. The rationale for this proposal is that, while operating costs may increase for providing service outside of the City limits, the capital costs per gallon of capacity for constructing major system facilities do not typically differ based on the location of the customer.

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:

1. Adopt the proposed SDFs and application methodology as developed in this Report;

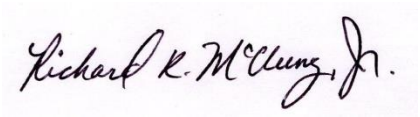
2. Enact the proposed SDFs to become effective on July 1, 2021 or other such date as determined appropriate by the City Council; and

3. Readdress the SDF study within the next 5 years, or at such times as future capital improvement plans indicate that increased capital expenditures are required that may result in material adjustments to the SDFs currently in effect.

We appreciate the opportunity to be of service to the City in this matter. In addition, we would like to thank you and the other members of the City staff for the valuable assistance and cooperation provided during the preparation of the Report. We look forward to working with you on future projects and continuing a successful professional relationship.

Respectfully Yours,

WILLDAN FINANCIAL SERVICES.



Richard K. McClung, Jr.
Principal

Daryll B. Parker
Principal

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EXHIBITS 1 - 9

SUPPORTING OUTPUT FOR THE FY 2021 WATER & WASTEWATER SDF STUDY

FY 2021 WATER & WASTEWATER SDF STUDY FOR THE CITY OF GASTONIA, NORTH CAROLINA

Prepared by Willdan Financial Services

EXHIBIT 1
SYSTEM DEVELOPMENT FEE ANALYSIS
EXISTING CAPITAL COSTS RECOVERABLE FROM SDFS
WATER & WASTEWATER SYSTEMS

Line	Description	Original Cost	Replacement Cost New	Accumulated Depreciation	RCNLD
	UTILITY ASSETS				
	Total Assets by Category:				
1	Buildings	$ 69,659,204	$ 247,356,980	$ (185,768,006)	$ 61,588,974
2	Equipment	14,544,839	67,608,787	(58,661,485)	8,947,302
3	Improvements	4,689,487	11,227,915	(7,998,110)	3,229,805
4	Infrastructure	200,224,502	841,007,142	(540,062,667)	300,944,475
5	Land	12,273,703	22,595,670	(18,046)	22,577,624
6	Vehicles	317,077	317,076	(158,608)	158,468
7	Work in Progress	0	0	0	0
8	Total	$ 301,708,812	$ 1,190,113,570	$ (792,666,922)	$ 397,446,648
	Adjusted For Assumed Cost Limit ($):				
9	Buildings	$ 66,005,411	$ 220,472,188	$ (160,566,901)	$ 59,905,287
10	Equipment	8,208,534	22,940,583	(15,470,989)	7,469,594
11	Improvements	4,216,637	9,576,998	(6,379,711)	3,197,287
12	Infrastructure	146,196,749	653,293,464	(426,720,783)	226,572,681
13	Land	10,854,472	19,726,355	0	19,726,355
14	Vehicles	152,451	152,451	(27,865)	124,586
15	Work in Progress	0	0	0	0
16	Total	$ 235,634,254	$ 926,162,039	$ (609,166,249)	$ 316,995,790
	Recoverable Allocation - Water (%):				
17	Buildings				**14%**
18	Equipment				**27%**
19	Improvements				**87%**
20	Infrastructure				**61%**
21	Land				**75%**
22	Vehicles				**0%**
23	Work in Progress				**0%**
	Recoverable Allocation - Wastewater (%):				
24	Buildings				**86%**
25	Equipment				**73%**
26	Improvements				**13%**
27	Infrastructure				**39%**
28	Land				**25%**
29	Vehicles				**0%**
30	Work in Progress				**22%**

EXHIBIT 1
SYSTEM DEVELOPMENT FEE ANALYSIS
EXISTING CAPITAL COSTS RECOVERABLE FROM SDFS
WATER & WASTEWATER SYSTEMS

Line	Description	Original Cost	Replacement Cost New	Accumulated Depreciation	RCNLD
	System Allocation - Water ($):				
31	Buildings				$ 8,234,577
32	Equipment				1,983,596
33	Improvements				2,794,816
34	Infrastructure				139,226,311
35	Land				14,794,766
36	Vehicles				0
37	Work in Progress				0
38	Total				$ 167,034,066
	System Allocation - Wastewater ($):				
39	Buildings				$ 51,670,710
40	Equipment				5,485,998
41	Improvements				402,471
42	Infrastructure				87,346,370
43	Land				4,931,589
44	Vehicles				0
45	Work in Progress				0
46	Total				$ 149,837,138
47	**Grand Total Recoverable Assets**				**$ 316,871,204**
	COMPONENT ALLOCATION				
	Total Recoverable Water Facilities:				
48	Treatment Facilities				$ 27,807,755
49	Transmission Facilities				139,226,311
50	**Total**				$ 167,034,066
	Total Recoverable Wastewater Facilities:				
51	Treatment Facilities				$ 62,490,768
52	Transmission Facilities				87,346,370
53	**Total**				$ 149,837,138
	Combined Recoverable Facilities:				
54	Treatment Facilities				$ 90,298,523
55	Transmission Facilities				226,572,681
56	**Total**				$ 316,871,204
	COMPARISON TO TOTAL				
57	**Total Utility Assets**				$ 397,446,648
58	**Combined Recoverable Assets**				$ 316,871,204
	Difference (Assets Excluded From Recovery):				
59	Excluded From Recovery ($)				$ 80,575,444
60	Excluded From Recovery (%)				20.27%

EXHIBIT 1
SYSTEM DEVELOPMENT FEE ANALYSIS
EXISTING CAPITAL COSTS RECOVERABLE FROM SDFS
WATER & WASTEWATER SYSTEMS

Line	Description	Original Cost	Replacement Cost New	Accumulated Depreciation	RCNLD
	DEBT SERVICE CREDIT				
61	**Outstanding Debt Principal**				$ 55,369,477
	Allocation Percentage:				
62	Water				87.49%
63	Wastewater				12.51%
	Allocated Debt Service Credit:				
64	Water				$ 48,440,156
65	Wastewater				6,929,321
66	Total				$ 55,369,477
	Component Allocation - Water:				
67	Treatment Facilities				$ 46,065,000
68	Transmission Facilities				2,375,156
69	Total				$ 48,440,156
	Component Allocation - Wastewater:				
70	Treatment Facilities				$ 1,597,655
71	Transmission Facilities				5,331,665
72	Total				$ 6,929,321

EXHIBIT 2
SYSTEM DEVELOPMENT FEE ANALYSIS
CURRENT CAPITAL IMPROVEMENT PROGRAM FOR FY 2021 - FY 2031
WATER & WASTEWATER SYSTEMS

Line	Description	Project Type	Total	For Fiscal Years Ending June 30, 2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
1	**MUNICIPAL OPERATIONS CENTER**	G	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
	ECONOMIC DEVELOPMENT													
2	Initial Studies for Technology Park	G	$ 333,333	$ 0	$ 0	$ 0	$ 0	$ 66,667	$ 66,667	$ 66,667	$ 66,667	$ 66,667	$ 0	$ 0
3	Southwest Sewer Modelling (Casino)	G	0	0	0	0	0	0	0	0	0	0	0	0
4	Main Ave Sewer Lining from Trenton to Chester	G	0	0	0	0	0	0	0	0	0	0	0	0
5	**Subtotal**		$ 333,333	$ 0	$ 0	$ 0	$ 0	$ 66,667	$ 66,667	$ 66,667	$ 66,667	$ 66,667	$ 0	$ 0
	REGIONALIZATION													
6	Dallas Sewer Connection ($495,000 CWIP Gastonia Portion)	RR	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
7	Cramerton System	G	0	0	0	0	0	0	0	0	0	0	0	0
8	**Subtotal**		$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
	WWTP IMPROVEMENTS (CROWDERS CREEK)													
9	HMI Replacement Crowders Creek	RR	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
10	Process Automation Improvements Crowders Creek	RR	373,900	0	373,900	0	0	0	0	0	0	0	0	0
11	Crowders Creek WWTP Digester Repairs/Maintenance	RR	2,500,000	0	0	0	0	0	0	500,000	500,000	500,000	500,000	500,000
12	Replacement Bar Screens	RR	710,000	0	0	0	0	0	0	710,000	0	0	0	0
13	Crowders Creek WWTP Influent Sewer Replacement	RR	450,000	0	450,000	0	0	0	0	0	0	0	0	0
14	**Subtotal**		$ 4,033,900	$ 0	$ 823,900	$ 0	$ 0	$ 0	$ 0	$ 1,210,000	$ 500,000	$ 500,000	$ 500,000	$ 500,000
	SOUTHEAST SEWER EXPANSION													
	PHASE I													
15	Armstrong Ford PS & FM & Armstrong Ford Gravity Sewer AND Baltimore Part II Gravity Sewer		$ 5,800,000	$ 0	$ 5,800,000	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
16	Armstrong Ford Regional Pump Station (Contract #6)	G	6,100,000	0	6,100,000	0	0	0	0	0	0	0	0	0
17	Construction Observation & Administration	G	940,000	0	940,000	0	0	0	0	0	0	0	0	0
	PHASE II													
18	SE PS & FM (Line 4) & Union New Hope Road Waterline		8,700,000	0	8,700,000	0	0	0	0	0	0	0	0	0
19	Catawba Creek Outfall Part I (Line 5 thru #526, Line 6)	G	4,500,000	0	4,500,000	0	0	0	0	0	0	0	0	0
20	Catawba Creek Outfall Part II (Line 5 from #526, Line 5a)	G	6,900,000	0	6,900,000	0	0	0	0	0	0	0	0	0
21	Southeast Regional Pump Station (Contract #7)	G	5,200,000	0	5,200,000	0	0	0	0	0	0	0	0	0
22	Construction Observation & Administration	G	1,300,000	0	1,300,000	0	0	0	0	0	0	0	0	0
23	**Subtotal**		$ 39,440,000	$ 0	$ 39,440,000	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
	CWIP Projects (SE Sewer Expansion Related-Collection)													
24	Right of Way Easements (SE Sewer) (CWIP)	G	$ 1,500,000											
25	Permitting (CWIP)	G	400,000											
26	Southeast Sewer Expansion	G	4,470,443											
27	South Fork River Crossing	G	2,205,182											
28	Baltimore Sewer Ferc Crossing	G	2,015,624											
29	**Subtotal**		$ 10,591,248											
30	**Total Southeasst Sewer Expansion Costs**		**$ 50,031,248**											
	SEWER IMPROVEMENTS (NCDOT CONFLICTS)													
31	South New Hope Road Sewer Improvements	RR	$ 260,000	$ 0	$ 0	$ 0	$ 0	$ 0	$ 260,000	$ 0	$ 0	$ 0	$ 0	$ 0
32	I-85/321 Interchange (I-5000) - Utility Conflicts (Sewer)	RR	500,000	0	0	500,000	0	0	0	0	0	0	0	0
33	**Subtotal**		$ 760,000	$ 0	$ 0	$ 500,000	$ 0	$ 0	$ 260,000	$ 0	$ 0	$ 0	$ 0	$ 0
	SOUTHEAST WATER EXPANSION													
	PHASE II													
34	Developer Refunds	G	0	0	0	0	0	0	0	0	0	0	0	0
35	Right of Way Easements (SE Sewer)	G	0	0	0	0	0	0	0	0	0	0	0	0
36	Permitting	G	0	0	0	0	0	0	0	0	0	0	0	0
37	Construct Future Support Lines when SE Area is close to buildout		0	0	0	0	0	0	0	0	0	0	0	0
38	**Subtotal**		$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0

EXHIBIT 2
SYSTEM DEVELOPMENT FEE ANALYSIS
CURRENT CAPITAL IMPROVEMENT PROGRAM FOR FY 2021 - FY 2031
WATER & WASTEWATER SYSTEMS

Line	Description	Project Type	Total	For Fiscal Years Ending June 30, 2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
	COLLECTION SYSTEM IMPROVEMENTS (OUTFALL LINES)													
39	Berkley Forest Mobile Home Park Extension	RR	$ 30,000	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 30,000	$ 0	$ 0	$ 0	$ 0
40	Sewer Pier Failures	RR	2,000,000	0	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
41	Bradley	RR	169,950	0	0	169,950	0	0	0	0	0	0	0	0
42	Bridgewood Lane	RR	170,000	0	0	170,000	0	0	0	0	0	0	0	0
43	Modena Outfall Exposed Pipes	RR	170,000	0	0	0	170,000	0	0	0	0	0	0	0
44	Siegle Street	RR	138,000	0	0	0	138,000	0	0	0	0	0	0	0
45	Dixie Street (#2)	RR	138,000	0	0	0	0	138,000	0	0	0	0	0	0
46	Firestone Avenue Waterline Crossing	RR	60,000	0	0	0	0	60,000	0	0	0	0	0	0
47	Oakland Street Crossing and Line Repair	RR	228,000	0	0	0	0	0	228,000	0	0	0	0	0
48	Bessemer City Road	RR	96,000	0	0	0	0	96,000	0	0	0	0	0	0
49	Remount Road (Resurfacing)	RR	0	0	0	0	0	0	0	0	0	0	0	0
50	Firestone Outfall I&I	RR	0	0	0	0	0	0	0	0	0	0	0	0
51	Firestone Outfall Study	RR	150,000	0	150,000	0	0	0	0	0	0	0	0	0
52	Firestone Lower Basin I & I	RR	445,000	0	0	0	0	0	445,000	0	0	0	0	0
53	Trenton Street Service Reversals	RR	12,500	0	0	12,500	0	0	0	0	0	0	0	0
54	Parallel Line-LARGE (Firestone Interceptor)	RR	1,500,000	0	0	0	0	0	0	750,000	750,000	0	0	0
55	Firestone Upper Basin I&I (Manholes)	RR	300,000	0	0	300,000	0	0	0	0	0	0	0	0
56	1619 Ridgewood Drive (X675086)	RR	75,500	0	0	0	75,500	0	0	0	0	0	0	0
57	338 Rosemary (X675088)	RR	59,000	0	0	0	59,000	0	0	0	0	0	0	0
58	Sewer Line Exten. to serve 5900 to 6100 Block of Wilkinson Blvd	G	700,000	0	0	0	0	0	0	700,000	0	0	0	0
59	Sewer Lining Projects	RR	2,000,000	0	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
60	Highland Branch O/F Rehab	RR	0	0	0	0	0	0	0	0	0	0	0	0
61	Highland Branch O/F Full Rehab - Phase II	RR	2,500,000	0	0	436,200	315,425	300,000	600,000	400,000	448,375	0	0	0
62	Union Road - Sewer Collapsing	RR	500,000	0	0	0	250,000	250,000	0	0	0	0	0	0
63	Baltimore Basin Find & Fix	RR	1,250,000	0	0	0	0	0	0	0	0	750,000	500,000	0
64	Long Creek Outfall Rehab/Lining	RR	1,250,000	0	0	0	0	0	0	750,000	500,000	0	0	0
65	Flow Study (will know when needed by March 2018)	RR	100,000	0	0	0	100,000	0	0	0	0	0	0	0
66	Heatherloch O/F Manhole	RR	400,000	0	0	0	200,000	0	0	0	200,000	0	0	0
67	Cramerton Town Center Area	RR	0	0	0	0	0	0	0	0	0	0	0	0
68	Riverside Community	RR	0	0	0	0	0	0	0	0	0	0	0	0
69	Clyde, Wood and Gilmer Sanitary Sewer Relocation	RR	0	0	0	0	0	0	0	0	0	0	0	0
70	Old Town Area (Collapsing pipes under houses)	RR	0	0	0	0	0	0	0	0	0	0	0	0
71	Woodlawn Area (Collapsing pipes under houses)	RR	0	0	0	0	0	0	0	0	0	0	0	0
72	**Subtotal**		$ 14,441,950	$ 0	$ 550,000	$ 1,488,650	$ 1,707,925	$ 1,244,000	$ 1,673,000	$ 3,030,000	$ 2,298,375	$ 1,150,000	$ 900,000	$ 400,000
	SPECIAL ASSESSMENTS - SEWER													
73	Eaglebrook and Kendrick (CWIP - $141,756 City Portion)	G	$ 141,756											
74	**SCADA REPLACEMENT**	RR	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0

EXHIBIT 2
SYSTEM DEVELOPMENT FEE ANALYSIS
CURRENT CAPITAL IMPROVEMENT PROGRAM FOR FY 2021 - FY 2031
WATER & WASTEWATER SYSTEMS

Line	Description	Project Type	Total	For Fiscal Years Ending June 30, 2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
	PUMP STATION/FORCE MAIN IMPROVEMENTS	RR												
75	Duhart Force Main	RR	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
76	Eagle Road Sanitary Sewer Improvements	RR	200,000	0	200,000	0	0	0	0	0	0	0	0	0
77	Integrated Wastewater Collection Pump Station Controller Pilot	RR	57,500	0	57,500	0	0	0	0	0	0	0	0	0
78	Integrate Verbatim Polling Checks into SCADA	OU	16,600	0	16,600	0	0	0	0	0	0	0	0	0
79	Soft Dig Utility Relocates	RR	0	0	0	0	0	0	0	0	0	0	0	0
80	Grove Street Pump Station	RR	110,000	0	0	0	0	0	0	0	110,000	0	0	0
81	Beaty Road Pump Station Upgrade	RR	2,000,000	0	2,000,000	0	0	0	0	0	0	0	0	0
82	Beaty Road Pump Station Relocation ($8,500,000)	RR	0	0	0	0	0	0	0	0	0	0	0	0
83	WAN Communication Reliability to Pump Stations	RR	485,200	0	0	485,200	0	0	0	0	0	0	0	0
84	Catawba & Duhart HMI Improvements	RR	268,000	0	268,000	0	0	0	0	0	0	0	0	0
85	Eagle Road WWTP Flood Protection	RR	2,000,000	0	0	0	500,000	500,000	500,000	500,000	0	0	0	0
86	Baltimore Basin FM & PS Upgrade (Don't include)		0	0	0	0	0	0	0	0	0	0	0	0
87	Cramerton Town Hall Pump Station Improvements	RR	0	0	0	0	0	0	0	0	0	0	0	0
88	Lakewood Pump Station Relocation	RR	0	0	0	0	0	0	0	0	0	0	0	0
89	Lakewood Road Forcemain	RR	0	0	0	0	0	0	0	0	0	0	0	0
90	**Subtotal**		$ 5,137,300	$ 0	$ 2,542,100	$ 485,200	$ 500,000	$ 500,000	$ 500,000	$ 500,000	$ 110,000	$ 0	$ 0	$ 0
	LONG CREEK WWTP IMPROVEMENTS	RR												
91	Long Creek WWTP Phase II - Plant Sewer	RR	$ 311,200	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 311,200	$ 0	$ 0	$ 0
92	Long Creek WWTP Phase III - Plant Sewer	RR	107,600	0	0	0	0	0	0	0	107,600	0	0	0
93	Long Creek Outfall Rehab	RR	0	0	0	0	0	0	0	0	0	0	0	0
94	Long Creek HMI Replacement	RR	0	0	0	0	0	0	0	0	0	0	0	0
95	Long Creek Control Network- Design	RR	0	0	0	0	0	0	0	0	0	0	0	0
96	Long Creek Control Network- Construction	RR	451,000	0	0	451,000	0	0	0	0	0	0	0	0
97	Long Creek WWTP Digester Repairs/Maintenance -past 10 yrs	RR	0	0	0	0	0	0	0	0	0	0	0	0
98	Long Creek Electrical System/Upgrade Transformer- past 10 yrs	RR	0	0	0	0	0	0	0	0	0	0	0	0
99	Long Creek Clarifier Rehab	RR	335,000	0	335,000	0	0	0	0	0	0	0	0	0
100	**Subtotal**		$ 1,204,800	$ 0	$ 335,000	$ 451,000	$ 0	$ 0	$ 0	$ 0	$ 418,800	$ 0	$ 0	$ 0
	WATER IMPROVEMENTS (NCDOT CONFLICTS)													
101	I-85/321 Interchange (I-5000) - Utility Conflicts (Water)	RR	$ 125,000	$ 0	$ 0	$ 125,000	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
102	Dallas-Cherryville Hwy 279 widening utility conflicts	RR	$ 0	0	0	0	0	0	0	0	0	0	0	0
103	**Subtotal**		$ 125,000	$ 0	$ 0	$ 125,000	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
	WATER DISTRIBUTION IMPROVEMENTS													
104	Washington Street (Collapsing pipes under houses)	RR	$ 600,000	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 600,000
105	10" Waterline behind 212 W. Main Avenue	RR	150,000	0	0	0	0	0	0	0	0	0	0	150,000
106	1619 Ridgewood Drive	RR	75,500	0	0	0	0	0	0	0	0	0	0	75,500
107	338 Rosemary	RR	59,000	0	0	0	0	0	0	0	0	0	0	59,000
108	WL Improvements (Highland to Cramerton)	RR	208,000	0	0	0	0	0	0	0	0	0	0	208,000
109	Potable Water Line to Long Creek	RR	600,000	0	0	0	0	0	600,000	0	0	0	0	0
110	Water Distribution RTU Pilot Project	RR	95,700	0	95,700	0	0	0	0	0	0	0	0	0
	Bessemer City Booster Station (CWIP)	RR												
111	City Match (CWIP)	RR	0	0	0	0	0	0	0	0	0	0	0	0
112	Gaston County	RR	0	0	0	0	0	0	0	0	0	0	0	0
113	Bessemer City	RR	0	0	0	0	0	0	0	0	0	0	0	0

EXHIBIT 2
SYSTEM DEVELOPMENT FEE ANALYSIS
CURRENT CAPITAL IMPROVEMENT PROGRAM FOR FY 2021 - FY 2031
WATER & WASTEWATER SYSTEMS

Line	Description	Project Type	Total	For Fiscal Years Ending June 30, 2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
114	Line Stop (Isolation)		0	0	0	0	0	0	0	0	0	0	0	0
115	Rhyne Carter at Brookside School ($270K)	RR	270,000	0	0	0	0	0	0	0	270,000	0	0	0
116	Water Line Loop–West Hudson Blvd from US321 to Clyde Street		155,000	0	0	0	0	0	155,000	0	0	0	0	0
117	Water Line Loop–East Hudson Blvd from Efird St to Neal Hawkins		153,600	0	0	0	0	153,600	0	0	0	0	0	0
118	Water Line Loop – Clyde St from end of line to Hudson Blvd	RR	153,600	0	0	0	0	153,600	0	0	0	0	0	0
119	Stowe Rd (New Hope to Winder Trail)	RR	150,000	0	0	0	0	150,000	0	0	0	0	0	0
120	Water line extension for back feed to Town of Ranlo	RR	633,600	0	0	0	0	0	0	0	0	0	633,600	0
121	Back Feed to Clover (Past 10 years)	G	0	0	0	0	0	0	0	0	0	0	0	0
122	Little Mountain Rd to Robinson Rd (page 10 years)	RR	0	0	0	0	0	0	0	0	0	0	0	0
123	Amber Crest Drive	RR	75,000	0	0	0	0	75,000	0	0	0	0	0	0
124	Valve Evaluation and Replacement-Franklin Blvd	RR	600,000	0	600,000	0	0	0	0	0	0	0	0	0
125	Upgrade 16" AC to 24" Franklin (Outside 10 years)		0	0	0	0	0	0	0	0	0	0	0	0
126	Upgrade 16" AC to 24" - Redbud to Cramer. (Outside 10 years)		0	0	0	0	0	0	0	0	0	0	0	0
127	Upgrade 16" AC to 24" (Westover to Market St)	RR	0	0	0	0	0	0	0	0	0	0	0	0
128	Goodwill Village WL	RR	400,000	0	0	0	0	0	0	0	0	0	0	400,000
129	12" on Ozark (I-85 to New Hope)	RR	400,000	0	0	0	0	0	0	0	0	0	0	400,000
130	Gaston Day School Rd (Union to Hearthstone)	RR	500,000	0	0	0	0	0	0	0	0	0	0	500,000
131	Town Center Water Connection	RR	276,800	0	0	0	0	276,800	0	0	0	0	0	0
132	Cramer Mountain Rd Waterline Installation	G	76,000	0	0	0	0	76,000	0	0	0	0	0	0
133	Park Street Waterline Replacement	RR	1,290,000	0	0	0	0	0	0	0	0	0	645,000	645,000
134	Lakewood Drive Water Connection	G	10,000	0	0	0	0	10,000	0	0	0	0	0	0
135	Beaty Rd WL Loop (Pine to Kendrick)	RR	270,000	0	0	0	0	0	0	0	0	270,000	0	0
136	Old Dallas to Rankin Lake	RR	0	0	0	0	0	0	0	0	0	0	0	0
137	Shannon Bradley Road	RR	0	0	0	0	0	0	0	0	0	0	0	0
138	Washington St WL Rehabilitation	RR	0	0	0	0	0	0	0	0	0	0	0	0
139	Hydraulic Loop-S. New Hope Rd	RR	0	0	0	0	0	0	0	0	0	0	0	0
140	Water Service for Hamrick Rd	RR	0	0	0	0	0	0	0	0	0	0	0	0
141	Cramerton Village Water System Conversion	G	0	0	0	0	0	0	0	0	0	0	0	0
142	NE Loop Robinson Clemmer	RR	0	0	0	0	0	0	0	0	0	0	0	0
143	Bridge on South Fork	RR	1,000,000	0	0	1,000,000	0	0	0	0	0	0	0	0
144	**Subtotal**		$ 8,201,800	$ 0	$ 695,700	$ 1,000,000	$ 0	$ 895,000	$ 755,000	$ 0	$ 270,000	$ 270,000	$ 1,278,600	$ 3,037,500
	WATER SUPPLY/TREATMENT IMPROVEMENTS	0												
145	Crowders Mountain Pump Station Improvements	RR/OU	$ 60,000	$ 0	$ 0	$ 0	$ 0	$ 60,000	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
146	Raw Water System Monitoring Improvements	RR	0	0	0	0	0	0	0	0	0	0	0	0
147	Raw Water Pumping Improvements	RR	0	0	0	0	0	0	0	0	0	0	0	0
148	Replace Raw Water Line from Long Creek to Rankin Lake		15,000,000	0	0	0	0	0	0	0	0	0	15,000,000	0
149	ARV-Mtn Island to Long Creek Interconnect	RR	250,000	0	0	0	0	250,000	0	0	0	0	0	0
150	By Pass Valves at Rankin Lake	RR	100,000	0	0	0	0	100,000	0	0	0	0	0	0
151	ARV-Rankin Lake to WTP	RR	250,000	0	0	0	0	250,000	0	0	0	0	0	0
152	Rankin Lake Raw Water Main Bypass	RR	750,000	0	0	0	750,000	0	0	0	0	0	0	0
153	Water Loss Audit	RR	125,000	0	0	0	0	125,000	0	0	0	0	0	0
154	Water Model Update	RR	250,000	0	0	0	250,000	0	0	0	0	0	0	0
155	Rankin Lake 36" Valve Refurbishment	RR	350,000	0	0	0	350,000	0	0	0	0	0	0	0
156	Relocation of Chlorine Feed Points	RR	185,000	0	0	0	185,000	0	0	0	0	0	0	0
157	SPECIAL ASSESSMENTS - WATER	RR	230,000	0	0	0	0	20,000	20,000	20,000	20,000	50,000	50,000	50,000
158	**Subtotal**		$ 17,550,000	$ 0	$ 0	$ 0	$ 1,535,000	$ 805,000	$ 20,000	$ 20,000	$ 20,000	$ 50,000	$ 15,050,000	$ 50,000
	CWIP Project (Water Treatment)													
159	Water Treatment Plant Renovation Project		$ 65,488,872											

EXHIBIT 2
SYSTEM DEVELOPMENT FEE ANALYSIS
CURRENT CAPITAL IMPROVEMENT PROGRAM FOR FY 2021 - FY 2031
WATER & WASTEWATER SYSTEMS

Line	Description	Project Type	Total	For Fiscal Years Ending June 30, 2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
	Southwest Corridor Water and Sewer Expansion Projects													
	SE Sewer Projects (6,000 Potential Connections)													
160	Riverwood Plantation Sewer Interceptor	G	$ 2,835,000	$ 0	$ 0	$ 0	$ 0	$ 2,835,000	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
161	Brandon Creek Interceptor Sewer	G	2,700,000	0	0	0	0	2,700,000	0	0	0	0	0	0
162	Airport Basin Sewer and Pump Station	G	7,200,000	0	0	0	0	7,200,000	0	0	0	0	0	0
163	**Subtotal**		$ 12,735,000	$ 0	$ 0	$ 0	$ 0	$ 12,735,000	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
	SE Water Projects (4,500 Potential Connections)													
164	West Hudson Boulevard Water Line Extension	G	$ 800,000	$ 0	$ 0	$ 0	$ 0	$ 800,000	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
165	Stagecoach Rd and Davis Park Rd Water Lines	G	1,350,000	0	0	0	0	1,350,000	0	0	0	0	0	0
166	Little Mountain Rd and Forbes Rd Water Lines	G	2,550,000	0	0	0	0	2,550,000	0	0	0	0	0	0
167	Myrtle School and Linwood Rd Water Lines	G	1,700,000	0	0	0	0	1,700,000	0	0	0	0	0	0
168	**Subtotal**		$ 6,400,000	$ 0	$ 0	$ 0	$ 0	$ 6,400,000	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
169	**Total Water & Wastewater CIP……**		**$ 110,363,084**	**$ 0**	**$ 44,386,700**	**$ 4,049,850**	**$ 3,742,925**	**$ 22,645,667**	**$ 3,274,667**	**$ 4,826,667**	**$ 3,683,842**	**$ 2,036,667**	**$ 17,728,600**	**$ 3,987,500**
170	**Total CWIP Projects……**		**$ 76,221,877**											
171	**Total CIP & CWIP Projects……**		**$ 186,584,960**											

EXHIBIT 3
SYSTEM DEVELOPMENT FEE ANALYSIS
ALLOCATION OF CAPITAL IMPROVEMENTS PROGRAM
WATER AND WASTEWATER SYSTEMS

Line	Description	Total	Growth Related [1]	% Allocation		$ Allocation		Water		Wastewater	
				Water	Wastewater	Water	Wastewater	Transmission	Treatment	Transmission	Treatment
1	**MUNICIPAL OPERATIONS CENTER**	$ 0	100%	50%	50%	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
	ECONOMIC DEVELOPMENT										
2	Initial Studies for Technology Park	$ 333,333	100%	50%	50%	$ 166,667	$ 166,667	$ 166,667	$ 0	$ 166,667	$ 0
3	Southwest Sewer Modelling (Casino)	0	100%	50%	50%	0	0	0	0	0	0
4	Main Ave Sewer Lining from Trenton to Chester	0	100%	50%	50%	0	0	0	0	0	0
5	**Subtotal**	$ 333,333				$ 166,667	$ 166,667	$ 166,667	$ 0	$ 166,667	$ 0
	REGIONALIZATION										
6	Dallas Sewer Connection ($495,000 CWIP Gastonia Portion)	$ 0	0%	0%	100%	0	0	0	0	0	0
7	Cramerton System	0	100%	0%	100%	0	0	0	0	0	0
8	**Subtotal**	$ 0				$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
	WWTP IMPROVEMENTS (CROWDERS CREEK)										
9	HMI Replacement Crowders Creek	$ 0	0%	0%	100%	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
10	Process Automation Improvements Crowders Creek	373,900	0%	0%	100%	0	0	0	0	0	0
11	Crowders Creek WWTP Digester Repairs/Maintenance	2,500,000	0%	0%	100%	0	0	0	0	0	0
12	Replacement Bar Screens	710,000	0%	0%	100%	0	0	0	0	0	0
13	Crowders Creek WWTP Influent Sewer Replacement	450,000	0%	0%	100%	0	0	0	0	0	0
14	**Subtotal**	$ 4,033,900				$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
	SOUTHEAST SEWER EXPANSION [2]										
	PHASE I										
15	Armstrong Ford PS & FM & Armstrong Ford Gravity Sewer AN	$ 5,800,000	0%	0%	100%	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
16	Armstrong Ford Regional Pump Station (Contract #6)	6,100,000	100%	0%	100%	0	6,100,000	0	0	6,100,000	0
17	Construction Observation & Administration	940,000	100%	0%	100%	0	940,000	0	0	940,000	0
	PHASE II										
18	SE PS & FM (Line 4) & Union New Hope Road Waterline	8,700,000	0%	0%	100%	0	0	0	0	0	0
19	Catawba Creek Outfall Part I (Line 5 thru #526, Line 6)	4,500,000	100%	0%	100%	0	4,500,000	0	0	4,500,000	0
20	Catawba Creek Outfall Part II (Line 5 from #526, Line 5a)	6,900,000	100%	0%	100%	0	6,900,000	0	0	6,900,000	0
21	Southeast Regional Pump Station (Contract #7)	5,200,000	100%	0%	100%	0	5,200,000	0	0	5,200,000	0
22	Construction Observation & Administration	1,300,000	100%	0%	100%	0	1,300,000	0	0	1,300,000	0
23	**Subtotal**	$ 39,440,000				$ 0	$ 24,940,000	$ 0	$ 0	$ 24,940,000	$ 0
	CWIP Projects (SE Sewer Expansion Related-Collection)										
24	Right of Way Easements (SE Sewer) (CWIP)	$ 1,500,000	100%	0%	100%	$ 0	$ 1,500,000	$ 0	$ 0	$ 1,500,000	$ 0
25	Permitting (CWIP)	$ 400,000	100%	0%	100%	$ 0	$ 400,000	$ 0	$ 0	$ 400,000	$ 0
26	Southeast Sewer Expansion	$ 4,470,443	100%	0%	100%	$ 0	$ 4,470,443	$ 0	$ 0	$ 4,470,443	$ 0
27	South Fork River Crossing	$ 2,205,182	100%	0%	100%	$ 0	$ 2,205,182	$ 0	$ 0	$ 2,205,182	$ 0
28	Baltimore Sewer Ferc Crossing	$ 2,015,624	100%	0%	100%	$ 0	$ 2,015,624	$ 0	$ 0	$ 2,015,624	$ 0
29	**Subtotal**	$ 10,591,248				$ 0	$ 10,591,249	$ 0	$ 0	$ 10,591,249	$ 0
30	**Total Southeasst Sewer Expansion Costs**	**$ 50,031,248**				**$ 0**	**$ 35,531,249**	**$ 0**	**$ 0**	**$ 35,531,249**	**$ 0**
	SEWER IMPROVEMENTS (NCDOT CONFLICTS)										
31	South New Hope Road Sewer Improvements	$ 260,000	0%	0%	100%	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
32	I-85/321 Interchange (I-5000) - Utility Conflicts (Sewer)	500,000	0%	0%	100%	0	0	0	0	0	0
33	**Subtotal**	$ 760,000				$ 0	$ 0	$ 0	$ 0	$ 0	$ 0

EXHIBIT 3
SYSTEM DEVELOPMENT FEE ANALYSIS
ALLOCATION OF CAPITAL IMPROVEMENTS PROGRAM
WATER AND WASTEWATER SYSTEMS

Line	Description	Total	Growth Related [1]	% Allocation		$ Allocation		Water		Wastewater	
				Water	Wastewater	Water	Wastewater	Transmission	Treatment	Transmission	Treatment
	SOUTHEAST WATER EXPANSION PHASE II										
34	Developer Refunds	$ 0	100%	100%	0%	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
35	Right of Way Easements (SE Sewer)	0	100%	0%	100%	0	0	0	0	0	0
36	Permitting	0	100%	100%	0%	0	0	0	0	0	0
37	Construct Future Support Lines when SE Area is close to buildou	0	0%	100%	0%	0	0	0	0	0	0
38	**Subtotal**	$ 0				$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
	COLLEC. SYSTEM IMPROVEMENTS (OUTFALL LINES)										
39	Berkley Forest Mobile Home Park Extension	$ 30,000	0%	0%	100%	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
40	Sewer Pier Failures	2,000,000	0%	0%	100%	0	0	0	0	0	0
41	Bradley	169,950	0%	0%	100%	0	0	0	0	0	0
42	Bridgewood Lane	170,000	0%	0%	100%	0	0	0	0	0	0
43	Modena Outfall Exposed Pipes	170,000	0%	0%	100%	0	0	0	0	0	0
44	Siegle Street	138,000	0%	0%	100%	0	0	0	0	0	0
45	Dixie Street (#2)	138,000	0%	0%	100%	0	0	0	0	0	0
46	Firestone Avenue Waterline Crossing	60,000	0%	0%	100%	0	0	0	0	0	0
47	Oakland Street Crossing and Line Repair	228,000	0%	0%	100%	0	0	0	0	0	0
48	Bessemer City Road	96,000	0%	0%	100%	0	0	0	0	0	0
49	Remount Road (Resurfacing)	0	0%	0%	100%	0	0	0	0	0	0
50	Firestone Outfall I&I	0	0%	0%	100%	0	0	0	0	0	0
51	Firestone Outfall Study	150,000	0%	0%	100%	0	0	0	0	0	0
52	Firestone Lower Basin I & I	445,000	0%	0%	100%	0	0	0	0	0	0
53	Trenton Street Service Reversals	12,500	0%	0%	100%	0	0	0	0	0	0
54	Parallel Line-LARGE (Firestone Interceptor)	1,500,000	0%	0%	100%	0	0	0	0	0	0
55	Firestone Upper Basin I&I (Manholes)	300,000	0%	0%	100%	0	0	0	0	0	0
56	1619 Ridgewood Drive (X675086)	75,500	0%	0%	100%	0	0	0	0	0	0
57	338 Rosemary (X675088)	59,000	0%	0%	100%	0	0	0	0	0	0
58	Sewer Line Exten. to serve 5900 to 6100 Block of Wilkinson Blv	700,000	100%	0%	100%	0	700,000	0	0	700,000	0
59	Sewer Lining Projects	2,000,000	0%	0%	100%	0	0	0	0	0	0
60	Highland Branch O/F Rehab	0	0%	0%	100%	0	0	0	0	0	0
61	Highland Branch O/F Full Rehab - Phase II	2,500,000	0%	0%	100%	0	0	0	0	0	0
62	Union Road - Sewer Collapsing	500,000	0%	0%	100%	0	0	0	0	0	0
63	Baltimore Basin Find & Fix	1,250,000	0%	0%	100%	0	0	0	0	0	0
64	Long Creek Outfall Rehab/Lining	1,250,000	0%	0%	100%	0	0	0	0	0	0
65	Flow Study (will know when needed by March 2018)	100,000	0%	0%	100%	0	0	0	0	0	0
66	Heatherloch O/F Manhole	400,000	0%	0%	100%	0	0	0	0	0	0
67	Cramerton Town Center Area	0	0%	0%	100%	0	0	0	0	0	0
68	Riverside Community	0	0%	0%	100%	0	0	0	0	0	0
69	Clyde, Wood and Gilmer Sanitary Sewer Relocation	0	0%	0%	100%	0	0	0	0	0	0
70	Old Town Area (Collapsing pipes under houses)	0	0%	0%	100%	0	0	0	0	0	0
71	Woodlawn Area (Collapsing pipes under houses)	0	0%	0%	100%	0	0	0	0	0	0
72	**Subtotal**	$ 14,441,950				$ 0	$ 700,000	$ 0	$ 0	$ 700,000	$ 0

EXHIBIT 3
SYSTEM DEVELOPMENT FEE ANALYSIS
ALLOCATION OF CAPITAL IMPROVEMENTS PROGRAM
WATER AND WASTEWATER SYSTEMS

Line	Description	Total	Growth Related [1]	% Allocation Water	% Allocation Wastewater	$ Allocation Water	$ Allocation Wastewater	Water Transmission	Water Treatment	Wastewater Transmission	Wastewater Treatment
73	**SPECIAL ASSESSMENTS - SEWER**										
74	Eaglebrook and Kendrick (CWIP - $141,756 City Portion)	141,756	100%	0%	100%	0	141,756	0	0	141,756	0
75	**SCADA REPLACEMENT**	0	0%	0%	100%	0	0	0	0	0	0
	PUMP STATION/FORCE MAIN IMPROVEMENTS										
76	Duhart Force Main	$ 0	0%	0%	100%	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
77	Eagle Road Sanitary Sewer Improvements	200,000	0%	0%	100%	0	0	0	0	0	0
78	Integrated Wastewater Collection Pump Station Controller Pilot	57,500	0%	0%	100%	0	0	0	0	0	0
79	Integrate Verbatim Polling Checks into SCADA	16,600	0%	0%	100%	0	0	0	0	0	0
80	Soft Dig Utility Relocates	0	0%	0%	100%	0	0	0	0	0	0
81	Grove Street Pump Station	110,000	0%	0%	100%	0	0	0	0	0	0
82	Beaty Road Pump Station Upgrade	2,000,000	0%	0%	100%	0	0	0	0	0	0
83	Beaty Road Pump Station Relocation ($8,500,000)	0	0%	0%	100%	0	0	0	0	0	0
84	WAN Communication Reliability to Pump Stations	485,200	0%	0%	100%	0	0	0	0	0	0
85	Catawba & Duhart HMI Improvements	268,000	0%	0%	100%	0	0	0	0	0	0
86	Eagle Road WWTP Flood Protection	2,000,000	0%	0%	100%	0	0	0	0	0	0
87	Baltimore Basin FM & PS Upgrade (Don't include)	0	0%	0%	100%	0	0	0	0	0	0
88	Cramerton Town Hall Pump Station Improvements	0	0%	0%	100%	0	0	0	0	0	0
89	Lakewood Pump Station Relocation	0	0%	0%	100%	0	0	0	0	0	0
90	Lakewood Road Forcemain	0	0%	0%	100%	0	0	0	0	0	0
91	**Subtotal**	$ 5,137,300				$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
	LONG CREEK WWTP IMPROVEMENTS										
92	Long Creek WWTP Phase II - Plant Sewer	$ 311,200	0%	0%	100%	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
93	Long Creek WWTP Phase III - Plant Sewer	107,600	0%	0%	100%	0	0	0	0	0	0
94	Long Creek Outfall Rehab	0	0%	0%	100%	0	0	0	0	0	0
95	Long Creek HMI Replacement	0	0%	0%	100%	0	0	0	0	0	0
96	Long Creek Control Network- Design	0	0%	0%	100%	0	0	0	0	0	0
97	Long Creek Control Network- Construction	451,000	0%	0%	100%	0	0	0	0	0	0
98	Long Creek WWTP Digester Repairs/Maintenance -past 10 yrs	0	0%	0%	100%	0	0	0	0	0	0
99	Long Creek Electrical System/Upgrade Transformer- past 10 yrs	0	0%	0%	100%	0	0	0	0	0	0
100	Long Creek Clarifier Rehab	335,000	0%	0%	100%	0	0	0	0	0	0
101	**Subtotal**	$ 1,204,800				$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
	WATER IMPROVEMENTS (NCDOT CONFLICTS)										
102	I-85/321 Interchange (I-5000) - Utility Conflicts (Water)	$ 125,000	0%	100%	0%	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
103	Dallas-Cherryville Hwy 279 widening utility conflicts	0	0%	100%	0%	0	0	0	0	0	0
104	**Subtotal**	$ 125,000				$ 0	$ 0	$ 0	$ 0	$ 0	$ 0

EXHIBIT 3
SYSTEM DEVELOPMENT FEE ANALYSIS
ALLOCATION OF CAPITAL IMPROVEMENTS PROGRAM
WATER AND WASTEWATER SYSTEMS

Line	Description	Total	Growth Related [1]	% Allocation		$ Allocation		Water		Wastewater	
				Water	Wastewater	Water	Wastewater	Transmission	Treatment	Transmission	Treatment
	WATER DISTRIBUTION IMPROVEMENTS										
105	Washington Street (Collapsing pipes under houses)	$ 600,000	0%	100%	0%	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
106	10" Waterline behind 212 W. Main Avenue	150,000	0%	100%	0%	0	0	0	0	0	0
107	1619 Ridgewood Drive	75,500	0%	100%	0%	0	0	0	0	0	0
108	338 Rosemary	59,000	0%	100%	0%	0	0	0	0	0	0
109	WL Improvements (Highland to Cramerton)	208,000	0%	100%	0%	0	0	0	0	0	0
110	Potable Water Line to Long Creek	600,000	0%	100%	0%	0	0	0	0	0	0
111	Water Distribution RTU Pilot Project	95,700	0%	100%	0%	0	0	0	0	0	0
112	Bessemer City Booster Station (CWIP)	0	0%	100%	0%	0	0	0	0	0	0
113	City Match (CWIP)	0	0%	100%	0%	0	0	0	0	0	0
114	Gaston County	0	0%	100%	0%	0	0	0	0	0	0
115	Bessemer City	0	0%	100%	0%	0	0	0	0	0	0
116	Line Stop (Isolation)	0	0%	100%	0%	0	0	0	0	0	0
117	Rhyne Carter at Brookside School ($270K)	270,000	0%	100%	0%	0	0	0	0	0	0
118	Water Line Loop–West Hudson Blvd from US321 to Clyde Stree	155,000	0%	100%	0%	0	0	0	0	0	0
119	Water Line Loop–East Hudson Blvd from Efird St to Neal Hawk	153,600	0%	100%	0%	0	0	0	0	0	0
120	Water Line Loop – Clyde St from end of line to Hudson Blvd	153,600	0%	100%	0%	0	0	0	0	0	0
121	Stowe Rd (New Hope to Winder Trail)	150,000	0%	100%	0%	0	0	0	0	0	0
122	Water line extension for back feed to Town of Ranlo	633,600	0%	100%	0%	0	0	0	0	0	0
123	Back Feed to Clover (Past 10 years)	0	100%	100%	0%	0	0	0	0	0	0
124	Little Mountain Rd to Robinson Rd (page 10 years)	0	0%	100%	0%	0	0	0	0	0	0
125	Amber Crest Drive	75,000	0%	100%	0%	0	0	0	0	0	0
126	Valve Evaluation and Replacement-Franklin Blvd	600,000	0%	100%	0%	0	0	0	0	0	0
127	Upgrade 16" AC to 24" Franklin (Outside 10 years)	0	0%	100%	0%	0	0	0	0	0	0
128	Upgrade 16" AC to 24" - Redbud to Cramer. (Outside 10 years)	0	0%	100%	0%	0	0	0	0	0	0
129	Upgrade 16" AC to 24" (Westover to Market St)	0	0%	100%	0%	0	0	0	0	0	0
130	Goodwill Village WL	400,000	0%	100%	0%	0	0	0	0	0	0
131	12" on Ozark (I-85 to New Hope)	400,000	0%	100%	0%	0	0	0	0	0	0
132	Gaston Day School Rd (Union to Hearthstone)	500,000	0%	100%	0%	0	0	0	0	0	0
133	Town Center Water Connection	276,800	0%	100%	0%	0	0	0	0	0	0
134	Cramer Mountain Rd Waterline Installation	76,000	100%	100%	0%	76,000	0	76,000	0	0	0
135	Park Street Waterline Replacement	1,290,000	0%	100%	0%	0	0	0	0	0	0
136	Lakewood Drive Water Connection	10,000	100%	100%	0%	10,000	0	10,000	0	0	0
137	Beaty Rd WL Loop (Pine to Kendrick)	270,000	0%	100%	0%	0	0	0	0	0	0
138	Old Dallas to Rankin Lake	0	0%	100%	0%	0	0	0	0	0	0
139	Shannon Bradley Road	0	0%	100%	0%	0	0	0	0	0	0
140	Washington St WL Rehabilitation	0	0%	100%	0%	0	0	0	0	0	0
141	Hydraulic Loop-S. New Hope Rd	0	0%	100%	0%	0	0	0	0	0	0
142	Water Service for Hamrick Rd	0	0%	100%	0%	0	0	0	0	0	0
143	Cramerton Village Water System Conversion	0	100%	100%	0%	0	0	0	0	0	0
144	NE Loop Robinson Clemmer	0	0%	100%	0%	0	0	0	0	0	0
145	Bridge on South Fork	1,000,000	0%	100%	0%	0	0	0	0	0	0
146	**Subtotal**	$ 8,201,800				$ 86,000	$ 0	$ 86,000	$ 0	$ 0	$ 0

EXHIBIT 3
SYSTEM DEVELOPMENT FEE ANALYSIS
ALLOCATION OF CAPITAL IMPROVEMENTS PROGRAM
WATER AND WASTEWATER SYSTEMS

Line	Description	Total	Growth Related [1]	% Allocation		$ Allocation		Water		Wastewater	
				Water	Wastewater	Water	Wastewater	Transmission	Treatment	Transmission	Treatment
	WATER SUPPLY/TREATMENT IMPROVEMENTS										
147	Crowders Mountain Pump Station Improvements	$ 60,000	0%	100%	0%	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
148	Raw Water System Monitoring Improvements	0	0%	100%	0%	0	0	0	0	0	0
149	Raw Water Pumping Improvements	0	0%	100%	0%	0	0	0	0	0	0
150	Replace Raw Water Line from Long Creek to Rankin Lake	15,000,000	0%	100%	0%	0	0	0	0	0	0
151	ARV-Mtn Island to Long Creek Interconnect	250,000	0%	100%	0%	0	0	0	0	0	0
152	By Pass Valves at Rankin Lake	100,000	0%	100%	0%	0	0	0	0	0	0
153	ARV-Rankin Lake to WTP	250,000	0%	100%	0%	0	0	0	0	0	0
154	Rankin Lake Raw Water Main Bypass	750,000	0%	100%	0%	0	0	0	0	0	0
155	Water Loss Audit	125,000	0%	100%	0%	0	0	0	0	0	0
156	Water Model Update	250,000	0%	100%	0%	0	0	0	0	0	0
157	Rankin Lake 36" Valve Refurbishment	350,000	0%	100%	0%	0	0	0	0	0	0
158	Relocation of Chlorine Feed Points	185,000	0%	100%	0%	0	0	0	0	0	0
159	SPECIAL ASSESSMENTS - WATER	230,000	0%	100%	0%	0	0	0	0	0	0
160	**Subtotal**	$ 17,550,000				$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
	CWIP Project (Water Treatment)										
161	Water Treatment Plant Renovation Project	**$ 65,488,872**	100%	100%	0%	$ 65,488,872	$ 0	$ 0	$ 65,488,872	$ 0	$ 0
	SW Water Projects										
162	West Hudson Boulevard Water Line Extension	$ 800,000	100%	100%	0%	$ 800,000	$ 0	$ 800,000	$ 0	$ 0	$ 0
163	Stagecoach Rd and Davis Park Rd Water Lines	1,350,000	100%	100%	0%	1,350,000	0	1,350,000	0	0	0
164	Little Mountain Rd and Forbes Rd Water Lines	2,550,000	100%	100%	0%	2,550,000	0	2,550,000	0	0	0
165	Myrtle School and Linwood Rd Water Lines	1,700,000	100%	100%	0%	1,700,000	0	1,700,000	0	0	0
166	**Subtotal**	$ 6,400,000				$ 6,400,000	$ 0	$ 6,400,000	$ 0	$ 0	$ 0
	Southwest Corridor Sewer Expansion Projects (6,000 Potential Connections)										
167	Riverwood Plantation Sewer Interceptor	$ 2,835,000	100%	0%	100%	$ 0	$ 2,835,000	$ 0	$ 0	$ 2,835,000	$ 0
168	Brandon Creek Interceptor Sewer	2,700,000	100%	0%	100%	0	2,700,000	0	0	2,700,000	0
169	Airport Basin Sewer and Pump Station	7,200,000	100%	0%	100%	0	7,200,000	0	0	7,200,000	0
170	**Total**	$ 12,735,000				$ 0	$ 12,735,000	$ 0	$ 0	$ 12,735,000	$ 0

EXHIBIT 3
SYSTEM DEVELOPMENT FEE ANALYSIS
ALLOCATION OF CAPITAL IMPROVEMENTS PROGRAM
WATER AND WASTEWATER SYSTEMS

Line	Description	Total	Growth Related [1]	% Allocation		$ Allocation		Water		Wastewater	
				Water	Wastewater	Water	Wastewater	Transmission	Treatment	Transmission	Treatment
	Combined Projects										
171	**Total Water & Wastewater CIP……**	**$ 110,363,084**				**$ 6,652,667**	**$ 38,541,667**	**$ 6,652,667**	**$ 0**	**$ 38,541,667**	**$ 0**
172	**Total CWIP Projects……**	$ 76,221,877				$ 65,488,872	$ 10,733,005	$ 0	$ 65,488,872	$ 10,733,005	$ 0
173	**Total CIP & CWIP Projects……**	**$ 186,584,960**				**$ 72,141,539**	**$ 49,274,672**	**$ 6,652,667**	**$ 65,488,872**	**$ 49,274,672**	**$ 0**
	Total Costs Allocated for SDF Recovery (System-Wide):										
174	Water Treatment	$ 65,488,872									
175	Water Transmission	6,652,667									
176	**Subtotal**	**$ 72,141,539**									
177	Wastewater Treatment	$ 0									
178	Wastewater Transmission	1,008,423									
179	**Subtotal**	**$ 1,008,423**									
180	**Total Allocated Costs (System-Wide)**	**$ 73,149,962**									
	Total Costs Allocated for SDF Recovery (Southeast Corridor Expansion):										
181	Water Treatment	$ 0									
182	Water Transmission	0									
183	**Subtotal**	**$ 0**									
184	Wastewater Treatment	$ 0									
185	Wastewater Transmission	35,531,249									
186	**Subtotal**	**$ 35,531,249**									
187	**Total Allocated Costs (Southeast Corridor Expansion)**	**$ 35,531,249**									
	Total Costs Allocated for SDF Recovery (Southwest Corridor Expansion):										
188	Water Treatment	$ 0									
189	Water Transmission	0									
190	**Subtotal**	**$ 0**									
191	Wastewater Treatment	$ 0									
192	Wastewater Transmission	12,735,000									
193	**Subtotal**	**$ 12,735,000**									
194	**Total Allocated Costs (Southwest Corridor Expansion)**	**$ 12,735,000**									
195	**Total System-Wide, SE & SW Corridor for SDF Recovery**	**$ 121,416,211**									
196	**Total Capital Project Costs *Excluded* from SDF Recovery**	**$ 65,168,749**									

Notes:

(1) Represents the assumed percentage of applicable project costs that are related to expansion of major system facilities to accommodate new customer growth, and therefore recoverable from SDFs.

(2) The City has advised that it will apply a separate System Development Fee for new sewer connections specific to the Southeast & Southwest Development Areas. As such, the capital costs associated with these projects are excluded from the CIP and are calculated separately in Exhibit 6 and 7 for the Southeast and Southwest Development Area, respectively.

EXHIBIT 4
SYSTEM DEVELOPMENT FEE ANALYSIS
CALCULATION OF SYSTEM DEVELOPMENT FEE PER ERU
WATER SYSTEM

Line	Description		Total	
	Recoverable Capital Facilities (System-Wide)			
	Existing Facilities:			
1	Treatment Facilities		$ 27,807,755	
2	Transmission Facilities		139,226,311	
3	**Subtotal**		$ 167,034,066	(1)
	Capital Improvement Program:			
4	Treatment Facilities		$ 65,488,872	
5	Transmission Facilities		6,652,667	
6	**Subtotal**		$ 72,141,539	
	Combined:			
7	Treatment Facilities		$ 93,296,627	
8	Transmission Facilities		145,878,978	
9	**Total**		$ 239,175,605	
	Less Debt Service Principal:			
10	Treatment Facilities		$ (46,065,000)	
11	Transmission Facilities		(2,375,156)	
12	**Total**		$ (48,440,156)	(2)
	Net Capital Costs:			
13	Treatment Facilities		$ 47,231,627	
14	Transmission Facilities		143,503,822	
15	**Net Recoverable Costs**		$ 190,735,449	
	Available System Capacity (MGD)			
	Maximum Daily Treatment Capacity:			(3)
16	Gastonia Water Treatment Plant (MGD)		27.30	
17	Additional Capacity From CIP		0.00	
18	**Combined Capacity of Water Treatment Facilities (MGD)**		**27.30**	
	Average Day Capacity Adjustment:			
19	Treatment Capacity Based on Max/Avg Day Factor	1.50	18.20	
20	Unaccounted-For Water, Non-Revenue Capacity Adjustment	18.0%		
21	Estimated Treatment Capacity		**14.92**	(4)
	Estimated Transmission System Capacity:			
22	Transmission-to-Treatment Capacity Factor	2.00		
23	Estimated Transmission Capacity		**29.84**	(5)

EXHIBIT 4
SYSTEM DEVELOPMENT FEE ANALYSIS
CALCULATION OF SYSTEM DEVELOPMENT FEE PER ERU
WATER SYSTEM

Line	Description		Total	
	Estimated Cost Per Gallon of Capacity			
	Estimated Cost Per Gallon of Capacity:			
24	Treatment ($/Gallon)	$	3.17	
25	Transmission ($/Gallon)		4.81	
26	**Total Cost Per Gallon of Capacity**	**$**	**7.98**	
27	Assumed Standard Level of Service Per ERU (GPD of Capacity)		**267**	(6)
	Calculation of Proposed Fee Per ERU			
	Calculation of SDF Per ERU:			
28	Treatment Facilities	$	845	
29	Transmission Facilities		1,282	
30	Combined Cost	**$**	**2,127**	
	Rounding Adjusted Fee - Treatment:			
31	Calculated Fee Per ERU	$	845	
32	Less Rounding Adjustment		(5)	
33	Adjusted Fee	$	840	
	Rounding Adjusted Fee - Transmission:			
34	Calculated Fee Per ERU	$	1,282	
35	Less Rounding Adjustment		(2)	
36	Adjusted Fee	$	1,280	
	Proposed SDF Per ERU (Rounded):			
37	Treatment Facilities	$	840	
38	Transmission Facilities		1,280	
39	**Combined Cost**	**$**	**2,120**	

Line	Description	Total

Notes:

(1) *See* ***Exhibit 1*** *for the development of existing asset costs identified for capital recovery.*

(2) *Per the SDF calculation methodology set forth in HB 436, a debt service credit is applied in the water SDF calculation. The credit is equal to outstanding principal amount on existing utility-related debt as reported in the most recent audited financial report. The principal balance is allocated between water and wastewater as provided in* ***Exhibit 1*** *.*

(3) *Based on rated maximum daily plant capacity information as provided by City staff.*

(4) *The estimated average daily flow capacity assumes an MDF-to-ADF ratio of 1.50 times. An additional adjustment is made for assumed unaccounted-for water flows (e.g. line losses) in the system. For the purpose of this analysis, the line-loss factor is assumed to be 18%.*

(5) *It is assumed that the transmission facilities are capable of providing average water flow at least equal to twice the treatment capacity as adjusted for average day flow and losses an unaccounted for water, or 29.84 MGD .*

(6) *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 capacity design standards 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). However, it is assumed that this level of service is a maximum day usage and was divided by 1.5 to calculate an average day usage number, resulting in a standard level of service of 267 gpd of water system capacity.*

EXHIBIT 5
SYSTEM DEVELOPMENT FEE ANALYSIS
CALCULATION OF SYSTEM DEVELOPMENT FEE PER ERU
WASTEWATER SYSTEM

Line	Description		Total	
	Recoverable Capital Facilities (System-Wide)			
	Existing Facilities:			
1	Treatment Facilities		$ 62,490,768	
2	Transmission Facilities		87,346,370	
3	**Subtotal**		$ 149,837,138	(1)
	Capital Improvement Program:			
4	Treatment Facilities		$ 0	
5	Transmission Facilities		1,008,423	
6	**Subtotal**		$ 1,008,423	
	Combined:			
7	Treatment Facilities		$ 62,490,768	
8	Transmission Facilities		88,354,793	
9	**Total**		$ 150,845,561	
	Less Debt Service Principal:			
10	Treatment Facilities		$ (1,597,655)	
11	Transmission Facilities		(5,331,665)	
12	**Total**		$ (6,929,321)	(2)
	Net Capital Costs:			
13	Treatment Facilities		$ 60,893,113	
14	Transmission Facilities		83,023,128	
15	**Net Recoverable Costs**		$ 143,916,240	
	Available System Capacity (MGD)			
	Daily Treatment Capacity (MGD):			
16	Crowders WWTP		6.00	
17	Long Creek WWTP		16.00	
18	Eagle Road WWTP		4.00	
19	**Combined Capacity of WWTP Facilities (MGD)**		**26.00**	
20	I&I Capacity Adjustment	**25.0%**	**19.50**	(3)
	Estimated Transmission System Capacity:			
21	Transmission-to-Treatment Capacity Factor	**2.00**		
22	Estimated Transmission Capacity		**39.00**	(4)

EXHIBIT 5
SYSTEM DEVELOPMENT FEE ANALYSIS
CALCULATION OF SYSTEM DEVELOPMENT FEE PER ERU
WASTEWATER SYSTEM

Line	Description		Total	
	Estimated Cost Per Gallon of Capacity			
	Estimated Cost Per Gallon of Capacity:			
23	Treatment ($/Gallon)	$	3.12	
24	Transmission ($/Gallon)		2.13	
25	**Total Cost Per Gallon of Capacity**	**$**	**5.25**	
26	Assumed Standard Level of Service Per ERU (GPD of Capacity)		**263**	(5)
	Calculation of Proposed Fee Per ERU			
	Calculation of SDF Per ERU:			
27	Treatment Facilities	$	821	
28	Transmission Facilities		560	
29	Combined Cost	$	1,381	
	Rounding Adjusted Fee - Treatment:			
30	Calculated Fee Per ERU	$	821	
31	Less Rounding Adjustment		(1)	
32	Adjusted Fee	$	820	
	Rounding Adjusted Fee - Transmission:			
33	Calculated Fee Per ERU	$	560	
34	Less Rounding Adjustment		0	
35	Adjusted Fee	$	560	
	Proposed SDF Per ERU (Rounded):			
36	Treatment Facilities	$	820	
37	Transmission Facilities		560	
38	Combined Cost	**$**	**1,380**	

Line	Description	Total

Notes:

(1) See Exhibit 1 for the development of existing asset costs identified for capital recovery.

(2) Per the SDF calculation methodology set forth in HB 436, a debt service credit is applied in the wastewater SDF calculation. The credit is equal to outstanding principal amount on existing utility-related debt as reported in the most recent audited financial report. The principal balance is allocated between water and wastewater as provided in Exhibit 1.

(3) Similar to the line loss adjustment for water, the wastewater system capacity is reduced by the impacts of system inflow and infiltration (I&I). The assumed I&I adjustment is based on discussions with staff.

(4) It is assumed that the wastewater trunk lines and pumping facilities are designed to provide capacity at least equal to twice the permitted plant flow capacity, less the I&I capacity adjustment.

(5) 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 requirement would be based on 120 gallons of capacity per day per bedroom for a residential home. Assuming an average of 3.0 bedrooms per new home constructed and applying the State's flow standard to the average number of bedrooms, 1 ERU would result in a standard level of service of 360 gpd of wastewater system capacity. However, the City has advised that they have received approval from the State of North Carolina Department of Environmental Quality ("NCDEQ") to have their standard LOS for sewer reduced for sewer permitting from the 120 gallons per bedroom per day to a lower amount. The City's engineering consultant provided a report that was submitted to NCDEQ for review and, subsequently, the NCDEQ approved using 150 gpd for 1 & 2 bedroom dwelling units with an additional 75 gpd for additional bedrooms. The City has assumed an average of 3.5 bedrooms per new home construction, resulting in a wastewater LOS of 263 gallons per day.

EXHIBIT 6
SYSTEM DEVELOPMENT FEE ANALYSIS
CALCULATION OF SDF - SOUTHEAST DEVELOPMENT AREA
WASTEWATER COLLECTION SYSTEM

Line	Description		Total
	Determination of Southeast Area Wastewater SDF		
	Projected Capital Costs		
1	Southeast Area Collection Lines [1]	(1)	$ 35,531,249
2	Less Debt Service Credit of 25.0%		(8,882,812)
3	Recoverable Collection Facilities		$ 26,648,437
4	Estimated Number of ERUs at Build-Out [1]	(1)	9,000
5	**Collection-Related Fee Per ERU**		$ 2,961
	Rounding Adjusted Fee - Collection:		
6	Calculated Fee Per ERU		$ 2,961
7	Less Rounding Adjustment		(1)
8	**Adjusted Fee**		$ 2,960
9	Percent of Fee Paid by Developer/Homeowner		100%
10	Fee Paid by Developer/Homeowner		$ 2,960
11	Remainder of Fee Paid by TRU		$ 0
	Estimated Southeast Development Area Wastewater SDF		
12	System-Wide Treatment Component Fee Per ERU *(from Exhibit 5)*		$ 820
13	SE Development Area Collection-Related Fee Per ERU		2,960
14	**Total SE Development Area SDF**		$ 3,780

Note:

(1) Provided by City staff.

EXHIBIT 7
SYSTEM DEVELOPMENT FEE ANALYSIS
CALCULATION OF SDF - SOUTHWEST DEVELOPMENT AREA
WASTEWATER COLLECTION SYSTEM

Line	Description		Total
	Determination of Southwest Area Wastewater SDF		
	Projected Capital Costs		
1	Southwest Area Collection Lines [1]	(1)	**$ 12,735,000**
2	Less Debt Service Credit of 25.0%		(3,183,750)
3	Recoverable Collection Facilities Cost		$ 9,551,250
4	Estimated ERUs Supported by Facilities Included for Recovery [1]	(1)	6,000
5	**Southwest Area Collection-Related Fee Per ERU**		$ 1,592
	Rounding Adjusted Fee - Collection:		
6	Calculated Fee Per ERU		$ 1,592
7	Less Rounding Adjustment		(2)
8	**Adjusted Fee**		$ 1,590
9	Percent of Fee Paid by Developer/Homeowner		**100%**
10	Fee Paid by Developer/Homeowner		$ 1,590
11	Remainder of Fee Paid by TRU		$ 0
	Estimated Southwest Development Area Fee		
12	System-Wide Treatment Component Fee Per ERU (from Exhibit 5)		$ 820
13	Southwest Development Area Collection-Related Fee Per EDU		1,590
14	**Total Southwest Development Area SDF**		**$ 2,410**

Note:

(1) Provided by City staff.

EXHIBIT 8
SYSTEM DEVELOPMENT FEE ANALYSIS
SUMMARY OF EXISTING & PROPOSED SYSTEM DEVELOPMENT FEES
WATER & WASTEWATER SYSTEMS

Line	Description	Meter-Based ERU Factor	Fees by System		Combined Fee
			Water	Sewer	
	EXISTING FEES				
	System-Wide Fee (1)				
	Meter Size:				
1	3/4 Inch	1.00	$ 1,246	$ 868	$ 2,114
2	1.0 Inch	2.50	$ 3,115	$ 2,170	$ 5,285
3	1.5 Inch	5.00	$ 6,230	$ 4,340	$ 10,570
4	2.0 Inch	8.00	$ 9,968	$ 6,944	$ 16,912
5	3.0 Inch	16.00	$ 19,936	$ 13,888	$ 33,824
6	4.0 Inch	25.00	$ 31,150	$ 21,700	$ 52,850
7	6.0 Inch	50.00	$ 62,300	$ 43,400	$ 105,700
8	8.0 Inch	80.00	$ 99,680	$ 69,440	$ 169,120
9	10.0 Inch	115.00	$ 143,290	$ 99,820	$ 243,110
10	12.0 Inch	215.00	$ 267,890	$ 186,620	$ 454,510
	Southeast Development Area Fee (1)				
	Meter Size:				
11	3/4 Inch	1.00	$ 1,246	$ 3,150	$ 4,396
12	1.0 Inch	2.50	$ 3,115	$ 7,875	$ 10,990
13	1.5 Inch	5.00	$ 6,230	$ 15,750	$ 21,980
14	2.0 Inch	8.00	$ 9,968	$ 25,200	$ 35,168
15	3.0 Inch	16.00	$ 19,936	$ 50,400	$ 70,336
16	4.0 Inch	25.00	$ 31,150	$ 78,750	$ 109,900
17	6.0 Inch	50.00	$ 62,300	$ 157,500	$ 219,800
18	8.0 Inch	80.00	$ 99,680	$ 252,000	$ 351,680
19	10.0 Inch	115.00	$ 143,290	$ 362,250	$ 505,540
20	12.0 Inch	215.00	$ 267,890	$ 677,250	$ 945,140
	PROPOSED FEES				
	System-Wide Fee (2)				
	Meter Size:				
21	3/4 Inch	1.00	$ 2,120	$ 1,380	$ 3,500
22	1.0 Inch	2.50	$ 5,300	$ 3,450	$ 8,750
23	1.5 Inch	5.00	$ 10,600	$ 6,900	$ 17,500
24	2.0 Inch	8.00	$ 16,960	$ 11,040	$ 28,000
25	3.0 Inch	16.00	$ 33,920	$ 22,080	$ 56,000
26	4.0 Inch	25.00	$ 53,000	$ 34,500	$ 87,500
27	6.0 Inch	50.00	$ 106,000	$ 69,000	$ 175,000
28	8.0 Inch	80.00	$ 169,600	$ 110,400	$ 280,000
29	10.0 Inch	115.00	$ 243,800	$ 158,700	$ 402,500
30	12.0 Inch	215.00	$ 455,800	$ 296,700	$ 752,500
	OPTIONAL ACTUAL FLOW BASIS (3)				
	Charge Per Gallon of Capacity (GPD):				
31	Treatment Facilities		$ 3.17	$ 3.12	$ 3.17
32	Transmission Facilities		4.81	2.13	6.94
33	Cost Per GPD		$ 7.98	$ 5.25	$ 10.11

EXHIBIT 8
SYSTEM DEVELOPMENT FEE ANALYSIS
SUMMARY OF EXISTING & PROPOSED SYSTEM DEVELOPMENT FEES
WATER & WASTEWATER SYSTEMS

Line	Description	Meter-Based ERU Factor	Fees by System		Combined Fee
			Water	Sewer	
	Southeast Development Area Fee (4)				
	Meter Size:				
34	3/4 Inch	1.00	$ 2,120	$ 3,780	$ 5,900
35	1.0 Inch	2.50	$ 5,300	$ 9,450	$ 14,750
36	1.5 Inch	5.00	$ 10,600	$ 18,900	$ 29,500
37	2.0 Inch	8.00	$ 16,960	$ 30,240	$ 47,200
38	3.0 Inch	16.00	$ 33,920	$ 60,480	$ 94,400
39	4.0 Inch	25.00	$ 53,000	$ 94,500	$ 147,500
40	6.0 Inch	50.00	$ 106,000	$ 189,000	$ 295,000
41	8.0 Inch	80.00	$ 169,600	$ 302,400	$ 472,000
42	10.0 Inch	115.00	$ 243,800	$ 434,700	$ 678,500
43	12.0 Inch	215.00	$ 455,800	$ 812,700	$ 1,268,500
	Southwest Development Area Fee (4)				
	Meter Size:				
44	3/4 Inch	1.00	$ 2,120	$ 2,410	$ 4,530
45	1.0 Inch	2.50	$ 5,300	$ 6,025	$ 11,325
46	1.5 Inch	5.00	$ 10,600	$ 12,050	$ 22,650
47	2.0 Inch	8.00	$ 16,960	$ 19,280	$ 36,240
48	3.0 Inch	16.00	$ 33,920	$ 38,560	$ 72,480
49	4.0 Inch	25.00	$ 53,000	$ 60,250	$ 113,250
50	6.0 Inch	50.00	$ 106,000	$ 120,500	$ 226,500
51	8.0 Inch	80.00	$ 169,600	$ 192,800	$ 362,400
52	10.0 Inch	115.00	$ 243,800	$ 277,150	$ 520,950
53	12.0 Inch	215.00	$ 455,800	$ 518,150	$ 973,950

Notes:

(1) Reflects the existing water and sewer SDF fees for new System-Wide customers and wastewater customers located in the Southeast Development Area

(2) The proposed system-wide SDFs fees are based on the calculated fee per ERU as applied to the respective ERU factor. The proposed ERU factors for the SDFs are based on meter equivalency factors established by the AWWA. The calculated sewer fees exclude sewer capital costs associated with the Southeast and Southwest Development Areas.

(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. These unit costs reflect those specific to system-wide development.

(4) As advised by the City, the SDFs for water would be the same under both the system-wide and Southeast & Southwest Development Areas. The sewer transmission/collection component of the SDFs for the Southeast & Southwest Development Areas were calculated based on the potential number of new connections within the each development area and the capital costs related to sewer transmission required to serve those customers. The system-wide treatment component fee per ERU was utilized in the development of the Southeast & Southwest Development areas sewer SDFs. *(See Exhibit 6 & 7 for detailed Southeast and Southwest Development Area sewer fee calculations)*

EXHIBIT 9
SYSTEM DEVELOPMENT FEE ANALYSIS
COMPARISON WITH OTHER UTILITY SYSTEMS
WATER & WASTEWATER SYSTEMS

Line	Description		Water	Wastewater	Combined
	Gastonia (System-Wide Fees):				
1	Existing Fee Per ERU		$ 1,246	$ 868	$ 2,114
2	Proposed Fee Per ERU		$ 2,120	$ 1,380	$ 3,500
	Other Utilities:	(1)			
3	Charlotte, NC (CMU)		$ 846	$ 2,618	$ 3,464
4	Concord, NC	(2)	$ 1,262	$ 3,175	$ 4,437
5	Kannapolis, NC	(2)	$ 1,450	$ 3,550	$ 5,000
6	City of Asheville, NC	(3)	$ 1,372	$ 2,836	$ 4,208
7	Brunswick Regional Water & Sewer, NC		$ 3,200	$ 4,500	$ 7,700
8	Union County, NC		$ 1,200	$ 3,090	$ 4,290
9	Town of Cary, NC	(4)	$ 1,946	$ 2,640	$ 4,586
10	Mount Holly, NC		$ 1,230	$ 4,665	$ 5,895
11	ONWASA (NC)		$ 2,032	$ 3,700	$ 5,732
12	Brunswick County, NC	(5)	$ 1,152	$ 3,999	$ 5,151
13	Orange Water & Sewer Authority, NC	(4)	$ 1,767	$ 2,652	$ 4,419
14	Town of Mooresville, NC		$ 2,660	$ 3,150	$ 5,810
15	**Average of Other Utilities**		**$ 1,676**	**$ 3,381**	**$ 5,058**

Notes:

(1) Developed from fee information made available by the other utilities included. This study has attempted to ensure that fees included for comparison are applicable capital recovery fees consistent with the intent of the proposed fees developed herein. However, due to differences in terminology, fee structure and method of applying fees, such a direct comparison is often difficult to establish.

(2) The City is a member of WSACC. New connections to the wastewater system pay a Capital Recovery Fee to WSACC for treatment facilities. The current fee is $2,040 per ERU and is included with the City's fee provided herein.

(3) Water service is provided by the City and wastewater service is provided by the Metropolitan Sewerage District of Buncombe County.

(4) Assumes a single-family home 2,401 to 3,100 sq. ft. in size.

(5) Assumes a 3 bedroom residential home.