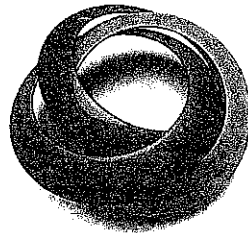


Town of Smithfield
Johnston County, North Carolina

System Development Fee Analysis

PROVIDED BY:



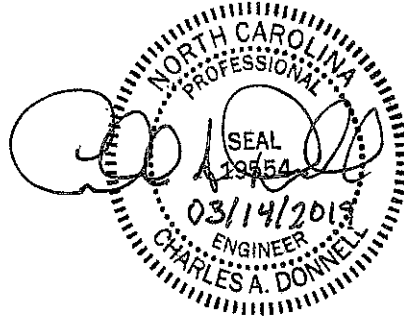
ENVIROLINK

March 14, 2019

Town of Smithfield

System Development Fee Analysis

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OVERVIEW

The Town of Smithfield (Town) retained EnviroLink, Inc. to prepare a System Development Fee (SDF) analysis for Town's Water and Waste Water utility systems in order to evaluate the potential level of a SDF fee if implemented as part of the Town's Rate and Fee schedule.

This SDF is developed in accordance with and to meet the requirements of General Statute 162A; Article 8; System Development Fees. System development fees are one-time charges that may be used to fund capital improvements necessary for the expansion of a utility system or to properly allocate the capital investment made by existing customers on utility system that is available to serve new development or a combination thereof. The Town cannot implement or continue any form of "system development" charges or fees unless they are developed, reviewed, approved and administered in accordance with Article 8. The scope of this analysis is limited to the development of a calculated maximum appropriate SDF, should the Town wish to implement a SDF under Article 8.

The SDF developed within this analysis, for both water and waste water, is based on Equivalent Residential Units (ERU) and an appropriate valuation of existing and planned (approved) facilities to be used by new development. The SDF, upon proper review and approval, can be implemented as a charge to be applied under the authority granted to the Town in accordance with General Statute 162A; Article 8; System Development Fees. (Subject to the appropriate Posting, Notice, Public Hearing and accounting requirements of Article 8.)

Other types (sizes) of connections are herein evaluated on an individual basis with respect to the capacity proportional to REU and the SDF for other size connections. This analysis provides a SDF schedule for other size connections in accordance with established standards.

The SDF developed within this analysis for the Town, is based on information provided by the Town, is reasonably related to the capital facility demands of new development and / or the value of the existing system and/or proposed expansions of the system to be made available for new development. This report documents the data, methodology, assumptions and results of the requested SDF analysis.

The maximum SDF per Equivalent Residential Unit (ERU) calculated for the Town as provided by this analysis is \$443.67 for the Water System and \$241.19 for the Waste Water System. The details and components are provided in the following analysis.

SYSTEM INFRASTRUCTURE

The following information was provided by the Town's staff in January, 2019 or obtained from information provided to the Division of Water Resources Local Water Supply Plan for 2017.

The Town's Water System contains over 116 miles of distribution system lines and over 5,703 retail customers. The Town has a river withdrawal permit limit of 6.2 Million Gallons per Day (MGD) and has never exceeded that amount. The Town had a Maximum Daily Use of 5.05 MGD during August 2017 and a calculated Average Daily Use of 3.428 MGD during 2017. In addition to the Town's water use, the Town provides approximately 2.0 MGD in Water sales to Johnston County Utilities via a 16 inch connection. The Town maintains approximately 2 million gallons of potable water storage facilities throughout the system. The Town assumes that the distribution system can convey all permitted water and uses 6.2 MGD as the operational capacity for planning purposes.

The Town's Waste Water system consists of over 85 miles of gravity pipes and 6 miles of force mains. The Waste Water system conveys an average of 2.0 MGD and a peak of 3.4 MGD to the Johnston County Utilities Waste Water Treatment Plant. The Town operates 18 lift stations with a combined capability of approximately 9.0 MGD, which have an assumed operational limit of 7.2 MGD.

The Town has several ongoing capital projects for which funds have been expended and principal payments have been made that are not in the Inventory of Assets. The principal payments on these projects have been included as the basis for the Incremental SDF calculation and include the following:

- (1) I&I Sand Removal - Waste Water Project - \$1.43 M - Principal to Date \$317,594.79
- (2) Various Water & Waste Water Projects - \$1.182 M - Principal to Date \$273,076.18
- (3) Booker Dairy Road Relocation - Water Project - \$2.037 M - Principal to Date \$412,638.74

In addition, during June 2018, the Town completed a 10 Year Capital Improvement Plan (CIP) for the Water and Waste Water system. The CIP outlines major capital projects and the Town is proceeding with obtaining financing for a number of these projects; however no financing has been completed for these projects.

REGULATORY REQUIREMENTS

In accordance with SESSION LAW 2017-138 HOUSE BILL 436 - AN ACT TO PROVIDE FOR UNIFORM AUTHORITY TO IMPLEMENT SYSTEM DEVELOPMENT FEES FOR PUBLIC WATER AND SEWER SYSTEMS IN NORTH CAROLINA AND TO CLARIFY THE APPLICABLE STATUTE OF LIMITATIONS; General Statute 162A; Article 8; System Development Fees was enacted wherein a "system development fee" is described as:

162A-201. Definitions.

(9) System development fee. – 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, as provided in this Article. The term includes amortized charges, lump-sum charges, and any other fee that functions as described by this definition regardless of terminology. The term does not include any of the following:

- a. A charge or fee to pay the administrative, plan review, or inspection costs associated with permits required for development.
- b. Tap or hookup charges for the purpose of reimbursing the local governmental unit for the actual cost of connecting the service unit to the system.
- c. Availability charges.
- d. Dedication of capital improvements on-site, adjacent, or ancillary to a development absent a written agreement providing for credit or reimbursement to the developer pursuant to G.S. 153A-280, 153A-451, 160A-320, 160A-499 or Part 3A of Article 18, Chapter 153A or Part 3D of Article 19, Chapter 160A of the General Statutes.
- e. Reimbursement to the local governmental unit for its expenses in constructing or providing for water or sewer utility capital improvements adjacent or ancillary to the development if the owner or developer has agreed to be financially responsible for such expenses; however, such reimbursement shall be credited to any system development fee charged as set forth in G.S. 162A-207(c).

In addition, General Statute 162A; Article 8; System Development Fees provides that the SDF analysis meet the following conditions:

162A-205. Supporting analysis.

A system development fee shall be calculated based on a written analysis, which may constitute or be included in a capital improvements 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.

The "service unit of new development" is based on the following definition:

162A-201. Definitions.

- (8) Service unit. – A unit of measure, typically an equivalent residential unit, calculated in accordance with generally accepted engineering or planning standards.

In addition, there are certain minimum requirements required by the statute.

162A-207. Minimum requirements.

- (a) Maximum. – A system development fee shall not exceed that calculated based on the system development fee analysis.
- (b) Revenue Credit. – In applying the incremental cost or marginal cost, or the combined cost, method to calculate a system development fee with respect to water or sewer capital improvements, the system development fee analysis must include as part of that methodology a credit against the projected aggregate cost of water or sewer capital improvements. That credit shall be determined based upon generally accepted calculations and shall reflect a deduction of either the outstanding debt principal or the present value of projected water and sewer revenues received by the local governmental unit for the capital improvements necessitated by and attributable to such new development, anticipated over the course of the planning horizon. In no case shall the credit be less than twenty-five percent (25%) of the aggregate cost of capital improvements.

(c) Construction or Contributions Credit. – In calculating the system development fee with respect to new development, the local governmental unit shall credit the value of costs in excess of the development's proportionate share of connecting facilities required to be oversized for use of others outside of the development: No credit shall be applied, however, for water or sewer capital improvements on-site or to connect new development to water or sewer facilities.

AUTHORIZATION AND IMPLEMENTATION

The SDF proposed by the Town is authorized by General Statute 162A; Article 8; System Development Fees:

162A-203. Authorization of system development fee.

(a) A local governmental unit may adopt a system development fee for water or sewer service only in accordance with the conditions and limitations of this Article.

(b) A system development fee adopted by a local governmental unit under any lawful authority other than this Article and in effect on October 1, 2017, shall be conformed to the requirements of this Article not later than July 1, 2018.

Town is required by General Statute 162A; Article 8; System Development Fees to implement and maintain the proposed SDF through the following process:

162A-209. Adoption and periodic review.

(a) For not less than 45 days prior to considering the adoption of a system development fee analysis, the local governmental unit shall post the analysis on its Web site and solicit and furnish a means to submit written comments, which shall be considered by the preparer of the analysis for possible modifications or revisions.

(b) After expiration of the period for posting, the governing body of the local governmental unit shall conduct a public hearing prior to considering adoption of the analysis with any modifications or revisions. (c) The local governmental unit shall publish the system development fee in its annual budget or rate plan or ordinance. The local governmental unit shall update the system development fee analysis at least every five years.

COLLECTION AND USE OF REVENUE FROM SDF

162A-211. Use and administration of revenue.

(a) Revenue from system development fees calculated using the incremental cost method or marginal cost method, exclusively or as part of the combined cost method, shall be expended only to pay:

(1) Costs of constructing capital improvements including, and limited to, any of the following:

- a. Construction contract prices.
- b. Surveying and engineering fees.
- c. Land acquisition cost.
- d. Principal and interest on bonds, notes, or other obligations issued by or on behalf of the local governmental unit to finance any costs for an item listed in sub-subdivisions a. through c. of this subdivision.

(2) Professional fees incurred by the local governmental unit for preparation of the system development fee analysis.

(3) If no capital improvements are planned for construction within five years or the foregoing costs are otherwise paid or provided for, then principal and interest on bonds, notes, or other obligations issued by or on behalf of a local governmental unit to finance the construction or acquisition of existing capital improvements.

(b) Revenue from system development fees calculated using the buy-in method may be expended for previously completed capital improvements for which capacity exists and for capital rehabilitation projects. The basis for the buy-in calculation for previously completed capital improvements shall be determined by using a generally accepted method of valuing the actual or replacement costs of the capital improvement for which the buy-in fee is being collected less depreciation, debt credits, grants, and other generally accepted valuation adjustments.

(c) A local governmental unit may pledge a system development fee as security for the payment of debt service on a bond, note, or other obligation subject to compliance with the foregoing limitations.

(d) System development fee revenues shall be accounted for by means of a capital reserve fund established pursuant to Part 2 of Article 3 of Chapter 159 of the General Statutes and limited as to expenditure of funds in accordance with this section.

The Town is allowed to collect the SDF in when the following conditions are met:

162A-213. Time for collection of system development fees.

For new development involving the subdivision of land, the system development fee shall be collected by a local governmental unit either at the time of plat recordation or when water or sewer service for the subdivision or other development is committed by the local governmental unit. For all other new development, the local governmental unit shall collect the system development fee at the time of application for connection of the individual unit of development to the service or facilities.

SYSTEM DEVELOPMENT FEE CALCULATION METHODOLOGY

The following methodology was used to calculate the System Development Fee Buy-In component for this analysis:

$$\frac{\text{SYSTEM CAPACITY (GPD)}}{\text{(GPD)/ EQUIVALENT RESIDENTIAL UNIT}} = \frac{\text{TOTAL EQUIVALENT RESIDENTIAL UNITS (SYSTEM)}}{\text{(Based on Capacity of Each System)}}$$

$$\frac{\text{SYSTEM VALUE (REPLACEMENT COST NEW LESS DEPRECIATION- ADJUSTED FOR DEBT, ETC.)}}{\text{TOTAL EQUIVALENT RESIDENTIAL UNITS (SYSTEM CAPACITY)}} =$$

$$= \text{SYSTEM DEVELOPMENT FEE (BUY-IN) / EQUIVALENT RESIDENTIAL UNIT}$$

The following methodology was used to calculate the System Development Fee Incremental component for this analysis:

$$\frac{[\text{TOTAL PROJECT COST (TO DATE) - INTEREST (TO DATE)] = \text{TOTAL PRINCIPAL (TO DATE)}}{\text{TOTAL EQUIVALENT RESIDENTIAL UNITS (SYSTEM CAPACITY)}} =$$

$$= \text{SYSTEM DEVELOPMENT FEE (INCREMENTAL) / EQUIVALENT RESIDENTIAL UNIT}$$

DEVELOPMENT FEE CALCULATION METHODOLOGY - BUY-IN ASSET VALUATION

In accordance with General Statute 162A; Article 8; System Development Fees; (162A-205. Supporting analysis)... "A system development fee shall be calculated based on a written analysis, which may constitute or be included in a capital improvements plan, that:

- (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."

The 7th edition of AWWA's "Principles of Water Rates, Fees, and Charges" documents methods used to calculate system value using descriptions similar to those in GS162A; Article 8. AWWA defines the most common options to determine the value for system development charges include the "buy-in method", "incremental cost method" and "combined approach". These terms are:

- " 1. The buy-in method is based on the value of the existing system's capacity. This method is typically used when the existing system has sufficient capacity to serve new development now and into the future.
2. The incremental cost method is based on the value or cost to expand the existing system's capacity. This method is typically used when the existing system has limited or no capacity to serve new development and new or incremental facilities are needed to serve new development now and into the future.

3. The combined approach is based on a blended value of both the existing and expanded system's capacity. This method is typically used where some capacity is available in parts of the existing system (e.g., source of supply), but new or incremental capacity will need to be built in other parts (e.g., treatment plant) to serve new development at some point in the future."

AWWA's "Principles of Water Rates, Fees and Charges" documents several options to calculate the value of the existing system's capacity.

"Validation and system equity. There are different methods used to establish a value to the existing assets under the buy-in methodology. If the existing assets are valued at their original cost or depreciated original cost, this is often referred to as the original cost method. An alternative valuation approach is to value the existing assets at a replacement cost or a depreciated replacement cost. This is commonly referred to as the replacement cost method. According to the replacement cost method, the existing system components are valued at the current-day cost of replicating the existing assets. This is typically accomplished through the use of a construction cost index or other comparable valuation method to bring the historical costs up to current-day value. In summary form the four valuation approaches for system assets under the buy-in method are as follows:

1. Original cost (OC) is the cost of construction in the year of construction.
2. Original cost less accumulated depreciation (OCLD) is also known as the net book value of the system assets.
3. Replacement cost new (RCN) is the original cost escalated to current-day dollars, providing an estimate of the current-day cost of replicating the existing facilities.
4. Replacement cost new less depreciation (RCNLD) is the original cost escalated to current-day dollars, less accumulated replacement cost depreciation. This provides an estimate of the current-day cost of duplicating the existing facilities that is then adjusted by an estimate of the replacement cost depreciation, resulting in a replacement cost valuation that reflects the remaining depreciable life of the facility."

"A combination of the approaches may also be used. Using the OC and OCLD valuations, the SDC reflects the original investment in the existing capacity. The new customer "buys in" to the capacity at the OC or the net book value cost (OCLD) for the facilities and as a result pays an amount similar to what the existing customers paid for the capacity (OC) or the remaining value of the original investment (OCLD)."

"Using the RCN and the RCNLD valuations, the SDC [System Development Charge] reasonably reflects the cost of providing new expansion capacity to customers as if the capacity was added at the time the new customers connected to the water system. It may also be thought of as a valuation method to fairly compensate the existing customers for the carrying costs of the excess capacity built into the system in advance of when the new customers connect to the system. This is because, up to the point of the new customer connecting to the system, the existing customers have been financially responsible for the carrying costs of that excess capacity that is available for development.

System liabilities and equity. Balance-sheet liabilities and equity that are recognized in the valuation method should equitably address the issue of the outstanding principal portion of long-term debt. When debt is issued to finance a growth- or expansion-related project, the principal portion of the debt service will be repaid over time, possibly through a customer's

rates after connection to the system and payment of an SDC. Given that, a debt credit may be applicable to avoid the potential double-charging of these debt costs through both the SDC and user rates. In a situation where the SDC is separated into functional components (source of supply, treatment, pumping, transmission, etc.), the analysis may provide these debt credits at the functional level or on a combined system level at the end of the analysis."

"Valuation adjustments may be necessary if grants or other contributions were used to develop the capacity-related facilities or if a facility is replaced and the resulting replacement provides additional capacity to accommodate future customers. This may be addressed within the valuation process by determining the percentage of the asset eligible for the SDC (i.e., percent SDC eligible). For example, if grants were provided specifically for the water treatment facilities, these grant contributions should be credited to the value (cost) of those specific facilities, and the grant-related portion of the water treatment plant's value should not be included in the SDC."

In addition, GS 162A-211 "Use and administration of revenue" paragraph (b) states "The basis for the buy-in calculation for previously completed capital improvements shall be determined by using a generally accepted method of valuing the actual or replacement costs of the capital improvement for which the buy-in fee is being collected less depreciation, debt credits, grants, and other generally accepted valuation adjustments." Therefore, the AWWA methodologies of OCLD or RCNLD meets the requirements of this section.

The "buy-in" methodology is used to value the existing infrastructure and the valuation of the complete infrastructure is based on Replacement Cost New Less Depreciation (RCNLD) to properly address the "carrying costs" of the existing system infrastructure borne by the existing customers.

Each system's value is then divided by the Town's total ERU for water or waste water based on each system's capacity to determine the Buy -In SDF / ERU.

SYSTEM DEVELOPMENT FEE CALCULATION METHODOLOGY - INCREMENTAL ASSET VALUATION

The "incremental cost" methodology is used to when additional facilities are needed to provide capacity due to additional growth or maintain service to ensure system reliability. During the development and construction of the additional facilities, these projects under construction would not be included as current capital assets of the Town. However, funds have been expended by the Town and revenues have been collected from the Town's existing customers for these facilities. These revenues have recouped costs to date for payments for actual equipment or facilities or the payment to date of principal and interest as part of the project financing. As a result, the existing customers, through the rates, have made a principal investment in the new projects which may not be included in the existing assets.

Therefore, it is appropriate to incorporate the valuation funds expended for these projects into the development of the SDF costs in order adequately address principal investment made by the existing customers. The SDF analysis methodology used sums the principal paid to date for existing capital expenditures that are not included in the Asset Inventory and excludes interest paid to date and other contributions for approved and implemented projects. This adequately addresses the requirements of Article 8 for the exclusion of interest and other contributions .

The "incremental cost" methodology described above is used to value facilities that are approved, for which funds have been expended and that are not included in the assets used by the "buy-in" methodology described in the preceding section.

Each system's value of principal payments for ongoing projects is then divided by the Town's total ERU for water or waste water based on each system's capacity to determine the Incremental SDF / ERU. For the comparison of the credit related to the Incremental SDF, the total payments to date by the existing customers is divided by the Town's existing ERU for water or wastewater based on the Town's maximum usage to date. This provides a more accurate comparison to the costs incurred by the existing customer base for the ongoing projects compared to the calculated Incremental SDF / ERU for new customers.

EQUIVALENT RESIDENTIAL UNIT TOTAL

In accordance with GS 162A-205 (6); the analysis is required to calculate "... 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." GS 162A-201(8) defines Service unit as "A unit of measure, typically an equivalent residential unit, calculated in accordance with generally accepted engineering or planning standards."

For this analysis, the SDF per ERU is based on the Total Equivalent Residential Units by Capacity for the Town. The Equivalent Residential Unit (ERU) is based on a demand of 360 gallons per day (GPD) for Waste Water use. (*NC Administrative Code 15A NCAC02T.0114 for a three-bedroom home based on 120 GPD per bedroom). The Total ERUs for water or wastewater is determined by dividing the system capacity GPD by the single ERU demand of 360 GPD for waste water or 400 GPD for water (assumes 90 percent pass through to waste water). This determines the Total ERU capable of being served by each system.

Total Equivalent Residential Units by Capacity

Water	System Capacity MGD	6.200 MGD
	System Capacity GPD	6,200,000 GPD
	Equivalent Residential Unit GPD *	<u>400 GPD / ERU</u>
	Total Equivalent Residential Units by Capacity	15,500 ERU (Capacity Based)
* NC Administrative Code 15A NCAC02T.0114 for a three bedroom home based on 120 GPD per bedroom		/ 0.9

Total Equivalent Residential Units by Capacity

Waste Water	System Capacity MGD	7.200 MGD
	System Capacity GPD	7,200,000 GPD
	Equivalent Residential Unit GPD	<u>360 GPD / ERU</u>
	Total Equivalent Residential Unit by Capacity	20,000 ERU (Capacity Based)

* NC Administrative Code 15A NCAC02T.0114 for a three bedroom home based on 120 GPD per bedroom

CALCULATION FOR VARIOUS CATEGORIES OF DEMAND

The analysis is also required to provide an equivalency or conversion table for use in determining the fees applicable for various categories of demand. The SDF for larger meters is determined by the SDF per ERU times the Capacity Factor for larger meters. The Capacity Factor methodology is consistent with industry standards and represent a reflection of the possible demand, and therefore capital cost of providing service for different meter sizes. The AWWA based Capacity Factor chart below is used to calculate SDF for "various categories of demand" which is based on the installed tap / meter size.

Meter Size	AWWA (capacity)	Capacity Factor
5/8 inch	20	1.00
3/4 inch	30	1.50
1 inch	50	2.50
1-1/2 inch	100	5.00
2 inch	160	8.00
3 inch	300	15.00
4 inch	500	25.00
6 inch	1,000	50.00
8 inch	1,600	80.00
10 inch	2,300	115.00
12 inch	4,300	215.00

CALCULATED SYSTEM DEVELOPMENT FEE

The calculated SDF shown below for the Town was developed using the System Development Fee Methodology described previously for the Buy-In and Incremental portions and utilizes the utility asset and capacity information provided by the Town. A SDF can be implemented after completing the required posting, notice and public hearing requirements, which includes addressing any comments received during the posting period. The Town can choose to implement a SDF that is less than or equal to the calculated SDF (Buy-In, Incremental or Total) as determined by this analysis.

Water System	Capital Assets	Equivalent Residential Unit (ERU) SDF Incremental Cost / ERU (Principal to Date)	(Buy In) (Incremental)	\$ \$	406.88 36.79
Water System	System Development Fee per ERU			\$	443.67
Waste Water System	Capital Assets	Equivalent Residential Unit (ERU) SDF Incremental Cost / ERU (Principal to Date)	(Buy In) (Incremental)	\$ \$	219.53 21.66
Waste Water System	System Development Fee per ERU			\$	241.19
Total System Development Fee per ERU				\$	684.86
RCNLD & Total Equivalent Residential Units by Capacity					

Meter Size	AWWA (GPM capacity)		Waste Water		
	Capacity Factor	Water SDF	SDF	Total SDF	
5/8 inch	20	1.00	\$ 443.67	\$ 241.18	\$ 684.86
3/4 inch	30	1.50	\$ 665.51	\$ 361.78	\$ 1,027.28
1 inch	50	2.50	\$ 1,109.18	\$ 602.96	\$ 1,712.14
1-1/2 inch	100	5.00	\$ 2,218.36	\$ 1,205.92	\$ 3,424.28
2 inch	160	8.00	\$ 3,549.37	\$ 1,929.47	\$ 5,478.85
3 inch	300	15.00	\$ 6,655.07	\$ 3,617.77	\$ 10,272.84
4 inch	500	25.00	\$ 11,091.79	\$ 6,029.61	\$ 17,121.40
6 inch	1,000	50.00	\$ 22,183.58	\$ 12,059.22	\$ 34,242.80

Note: Individual Residential Units to be charged at 5/8" rate regardless of actual meter size

NOTE: Commercial, Industrial, Institutional, and Irrigation meters maximum should be based actual meter / tap size.

CALCULATION OF SYSTEM DEVELOPMENT FEES (Buy-In)

The following charts show the calculation of each system's (Water or Waste Water) Replacement Cost New Less Depreciation, adjusted for outstanding debt, and adjusted for any assets currently in service but not included in the most recent Audited assets to determine the system asset value. The asset value for each system is then divided by the total Equivalent Residential Units (ERU) of capacity for that system to determine the SDF per ERU.

WATER ASSETS AND SDF CALCULATION

CODE	Smithfield Water System Asset Description	[1] Original Cost	[2] Dep Yrs	[3] Accrued Depreciation	[4] Yr Install	[5] % Dep	[6] Ins Yr Index	[7] 2018 Index	[8] RCN Factor	[9] RCN	[10] RCNLD
37	NEW WATER PLANT AND PUM	\$ 2,500,000.00	30	\$ 2,319,443.61	1988	92.8%	89.9	227.3	2.528	\$ 6,320,912.12	\$ 456,512.43
38	ALUM SLUDGE HANDLING FA	\$ 8,373.36	50	\$ 2,986.79	1998	35.7%	115.1	227.3	1.975	\$ 16,535.75	\$ 10,637.42
45	WATER PUMPING STATIONN	\$ 205,000.00	30	\$ 190,193.61	1988	92.8%	89.9	227.3	2.528	\$ 518,314.79	\$ 37,435.96
47	IMPROVEMENTS TO WATER P	\$ 205,762.00	30	\$ 85,734.13	2005	41.7%	151.6	227.3	1.499	\$ 308,507.27	\$ 179,962.63
149	MOTOR J. CO PUMP STATION	\$ 5,000.00	50	\$ 2,741.09	1989	54.8%	92.1	227.3	2.468	\$ 12,339.85	\$ 5,574.92
177	DECHLORINATION SYSTEM	\$ 22,609.00	30	\$ 9,420.38	2005	41.7%	151.6	227.3	1.499	\$ 33,898.59	\$ 19,774.23
186	RW INTAKE ENGINE REBUILD	\$ 30,056.01	10	\$ 23,794.33	2009	79.2%	180.1	227.3	1.262	\$ 37,932.99	\$ 7,902.72
188	STREAMING CURRENT MONIT	\$ 12,500.00	10	\$ 8,333.33	2010	66.7%	183.5	227.3	1.239	\$ 15,483.65	\$ 5,161.22
189	BACKWASH PUMP	\$ 57,959.13	10	\$ 34,775.46	2011	60.0%	191.2	227.3	1.189	\$ 68,902.25	\$ 27,560.92
190	ECLIPSE SAMPLING STATION	\$ 10,425.45	10	\$ 6,081.54	2011	58.3%	191.2	227.3	1.189	\$ 12,393.85	\$ 5,164.07
191	REPAIR FLOCCULATOR GEARBO	\$ 4,898.79	7	\$ 4,024.02	2011	82.1%	191.2	227.3	1.189	\$ 5,823.72	\$ 1,039.93
192	BACKFLOW INSTALL	\$ 5,368.00	7	\$ 4,153.82	2012	77.4%	194.6	227.3	1.168	\$ 6,270.02	\$ 1,418.21
194	DOUBLE WALL DAY TANK 25	\$ 17,605.00	10	\$ 8,215.67	2012	46.7%	194.6	227.3	1.168	\$ 20,563.29	\$ 10,967.08
195	INSTAVALVE UNIT COMPLETE	\$ 38,555.00	10	\$ 12,530.38	2014	32.5%	204.9	227.3	1.109	\$ 42,769.90	\$ 28,869.67
198	TANK - 20,000 GAL FERRIC SUL	\$ 27,850.00	10	\$ 7,658.75	2014	27.5%	204.9	227.3	1.109	\$ 30,894.61	\$ 22,398.59
200	SOLARBEE GS-12 MIXER	\$ 15,658.00	10	\$ 3,262.08	2015	20.8%	206.2	227.3	1.102	\$ 17,260.25	\$ 13,664.37
204	TMH ANALYZER	\$ 32,500.00	10	\$ 6,500.00	2015	20.0%	206.2	227.3	1.102	\$ 35,825.65	\$ 28,660.52
206	LAB TOC ANALYZER	\$ 23,500.00	10	\$ 4,700.00	2015	20.0%	206.2	227.3	1.102	\$ 25,904.70	\$ 20,723.76
207	GENERATOR/VFDs	\$ 97,700.00	10	\$ 12,212.50	2016	12.5%	207.3	227.3	1.096	\$ 107,125.95	\$ 93,735.21
208	STORAGE TANK 10,500 GAL (1	\$ 11,067.66	10	\$ 276.69	2017	2.5%	213.6	227.3	1.064	\$ 11,777.52	\$ 11,483.09
209	STORAGE TANK 10,500 GAL (2	\$ 11,067.66	10	\$ 276.69	2017	2.5%	213.6	227.3	1.064	\$ 11,777.52	\$ 11,483.09
212	MCC CABINET	\$ 25,000.00	10	\$ 2,500.00	2016	10.0%	207.3	227.3	1.096	\$ 27,411.96	\$ 24,670.77
213	HYDROGRITTER	\$ 54,344.00	10	\$ 5,434.40	2016	10.0%	207.3	227.3	1.096	\$ 59,587.03	\$ 53,628.33
214	SLUDGE PRESS	\$ 83,000.00	10	\$ 4,841.67	2016	5.8%	207.3	227.3	1.096	\$ 91,007.72	\$ 85,698.93
215	SLUDGE PRESS PUMP	\$ 15,617.00	10	\$ 1,301.42	2016	8.3%	207.3	227.3	1.096	\$ 17,123.71	\$ 15,696.73
216	PUMP 50HP FAIRNIJ PUMP STA	\$ 14,900.00	10	\$ 372.50	2017	2.5%	213.6	227.3	1.064	\$ 15,855.66	\$ 15,459.27
217	PUMP 50HP FAIRNIJ PUMP STA	\$ 14,900.00	10	\$ 372.50	2017	2.5%	213.6	227.3	1.064	\$ 15,855.66	\$ 15,459.27
313	12 INCH LINE BUFFALO RD	\$ 165,005.00	30	\$ 68,752.89	2005	41.7%	151.6	227.3	1.499	\$ 247,398.66	\$ 144,314.67
314	FLANDERS FILTER PROJECT	\$ 154,902.00	30	\$ 67,124.20	2004	43.3%	143.7	227.3	1.582	\$ 245,018.96	\$ 138,844.08
320	BUFFALO ROAD METER POINT	\$ 135,987.66	20	\$ 40,796.28	2011	30.0%	191.2	227.3	1.189	\$ 161,663.15	\$ 113,164.23
321	WALMART/BAYHILL LINE LOO	\$ 51,260.74	30	\$ 10,252.14	2011	20.0%	191.2	227.3	1.189	\$ 60,939.15	\$ 48,751.33
322	HOSPITAL ROAD W/S LINE	\$ 350,811.05	30	\$ 70,162.20	2011	20.0%	191.2	227.3	1.189	\$ 417,046.82	\$ 333,637.47
324	FIRE HYDRANT REPLACEMENT	\$ 49,781.52	20	\$ 9,956.32	2013	20.0%	201.2	227.3	1.130	\$ 56,239.26	\$ 44,991.39
327	LOH & ROF WATER FILTER CO	\$ 49,965.00	20	\$ 5,204.69	2015	10.4%	206.2	227.3	1.102	\$ 55,077.81	\$ 49,340.54
328	CHLORINE DIOXIDE SYSTEM	\$ 134,344.42	20	\$ 6,717.22	2016	5.0%	207.3	227.3	1.096	\$ 147,305.77	\$ 139,940.49
527	SLUDGE SYSTEM	\$ 1,249,864.10	30	\$ 756,867.75	1998	60.6%	115.1	227.3	1.975	\$ 2,468,237.27	\$ 973,571.42
529	300,000 GAL WATER TANK	\$ 275,000.00	30	\$ 255,139.13	1988	92.8%	89.9	227.3	2.528	\$ 695,300.33	\$ 50,215.53
530	1,000,000 GAL WTR TNK G LEV	\$ 200,000.00	30	\$ 185,556.39	1988	92.8%	89.9	227.3	2.528	\$ 505,672.97	\$ 36,518.72
531	REPAIRS TO WATER PLANT FIL	\$ 322,450.25	50	\$ 94,688.61	2002	29.4%	128.7	227.3	1.766	\$ 569,486.73	\$ 402,255.02
550	AMONIA TREAT SYSTEM	\$ 159,101.00	50	\$ 61,534.85	1996	38.7%	110.2	227.3	2.063	\$ 328,163.86	\$ 201,241.25
551	AMMONIA STORAGE TANK	\$ 8,890.00	50	\$ 3,141.32	1998	35.3%	115.1	227.3	1.975	\$ 17,556.01	\$ 11,352.52
553	16" WATER LINE IN SERV 15825	\$ 142,425.00	50	\$ 79,284.14	1988	55.7%	89.9	227.3	2.528	\$ 360,102.36	\$ 159,643.13
554	12" WATER LINE IN SER 11,475	\$ 68,850.00	50	\$ 38,326.50	1988	55.7%	89.9	227.3	2.528	\$ 174,077.92	\$ 77,174.54
555	8" WATER LINE IN SERVICE 22,	\$ 113,500.00	50	\$ 63,182.26	1988	55.7%	89.9	227.3	2.528	\$ 286,969.41	\$ 127,221.61
556	6" WATER LINE IN SERVICE 20	\$ 352,459.95	50	\$ 213,265.56	1988	60.5%	89.9	227.3	2.528	\$ 891,147.35	\$ 351,934.20
557	2" WATER LINE IN SERVICE 29	\$ 59,000.00	50	\$ 32,744.41	1988	55.5%	89.9	227.3	2.528	\$ 149,173.53	\$ 66,383.71
558	1 1/2" WATER LINE IN SERV 5,	\$ 10,850.00	50	\$ 6,021.16	1988	55.5%	89.9	227.3	2.528	\$ 27,432.76	\$ 12,209.07
559	10" WATER LINE IN SERV 1400	\$ 5,260.00	50	\$ 2,919.89	1988	55.5%	89.9	227.3	2.528	\$ 13,299.20	\$ 5,916.65
561	6" & 8" INSERT VALVES AND S	\$ 6,946.67	50	\$ 3,334.65	1992	48.0%	99.4	227.3	2.287	\$ 15,885.09	\$ 8,259.68
562	WEST SMITHFIELD WATER SY	\$ 466,374.00	50	\$ 395,869.84	1994	84.9%	104.4	227.3	2.177	\$ 1,015,390.90	\$ 153,501.87
563	RELOCATE WATER LINE ON M	\$ 23,192.00	50	\$ 9,315.17	1996	40.2%	110.2	227.3	2.063	\$ 47,836.13	\$ 28,622.54
564	WATER TAP @WAL-MART	\$ 23,869.00	50	\$ 9,388.34	1996	39.3%	110.2	227.3	2.063	\$ 49,232.52	\$ 29,868.00
565	WAL PAT RD WATER MAIN	\$ 51,563.20	50	\$ 20,109.70	1997	39.0%	112.8	227.3	2.015	\$ 103,903.50	\$ 63,381.03
566	RPLACE WATERLINE BETWEEN	\$ 14,652.50	50	\$ 4,835.29	1999	33.0%	117.6	227.3	1.933	\$ 28,320.69	\$ 18,974.93
567	WATER LINE HOLLAND DR	\$ 217,027.30	50	\$ 74,150.94	1999	34.2%	117.6	227.3	1.933	\$ 419,475.39	\$ 276,154.73
568	BARBOUR RD WATER LINE	\$ 78,336.00	50	\$ 27,025.92	1999	34.5%	117.6	227.3	1.933	\$ 151,409.63	\$ 99,173.31
570	WATER METER IN SERVICE	\$ 87,697.00	50	\$ 48,817.70	1988	55.7%	89.9	227.3	2.528	\$ 221,730.01	\$ 98,301.06
571	METER BOX IN SERVICE 3,585	\$ 223,148.75	50	\$ 124,218.72	1988	55.7%	89.9	227.3	2.528	\$ 564,201.46	\$ 250,131.21
572	6" FIRID/HYD	\$ 221,340.00	50	\$ 123,212.60	1988	55.7%	89.9	227.3	2.528	\$ 559,628.28	\$ 248,101.87
594	CLEAR WELL FENCING	\$ 14,459.24	10	\$ 10,362.43	2010	71.7%	183.5	227.3	1.239	\$ 17,910.55	\$ 5,074.69

CODE	Smithfield Water System Asset Description	[1] Original Cost	[2] Dep Yrs	[3] Accrued Depreciation	[4] Yr Install	[5] % Dep	[6] Ins Yr Index	[7] 2018 Index	[8] RCN Factor	[9] RCN	[10] RCNLD
596	WILSON ST LINE REPLACEMEN	\$ 30,520.00	20	\$ 3,306.33	2015	10.8%	206.2	227.3	1.102	\$ 33,643.05	\$ 29,998.39
615	ELECTRONIC CONTROL VALVE 2-Way (2)	\$ 34,164.75	20	\$ -	2017	0.0%	213.6	227.3	1.064	\$ 36,356.03	\$ 36,356.03
36	CONSTRUCTION OF NEW OFFICE	\$ 3,476.87	30	\$ 2,652.80	1994	76.3%	104.4	227.3	2.177	\$ 7,569.84	\$ 1,794.16
193	TELEPHONE SYSTEM	\$ 912.00	6	\$ 671.34	2013	73.6%	201.2	227.3	1.130	\$ 1,030.31	\$ 271.88
196	NESHAP COMPLIANCE SERVIC	\$ 11,250.00	10	\$ 3,375.00	2014	30.0%	204.9	227.3	1.109	\$ 12,479.87	\$ 8,735.91
197	NESHAP COMPLIANCE SERVIC	\$ 11,250.00	10	\$ 3,375.00	2014	30.0%	204.9	227.3	1.109	\$ 12,479.87	\$ 8,735.91
199	MINI EXCAVATOR - CATERPIL	\$ 30,439.50	10	\$ 8,370.87	2014	27.5%	204.9	227.3	1.109	\$ 33,767.20	\$ 24,481.21
201	SCADA - 9 STATIONS/FLOWER	\$ 25,876.50	10	\$ 7,116.04	2014	27.5%	204.9	227.3	1.109	\$ 28,705.36	\$ 20,811.38
203	BACKHOE LOADER 420F	\$ 40,750.00	10	\$ 7,470.84	2015	18.3%	206.2	227.3	1.102	\$ 44,919.86	\$ 36,684.55
498	2004 FORD F-250	\$ 6,919.50	83.3	\$ 6,919.50	2004	100.0%	143.7	227.3	1.582	\$ 10,945.04	\$ -
504	2012 FORD F750 TRUCK	\$ 41,221.50	5	\$ 41,221.50	2013	100.0%	201.2	227.3	1.130	\$ 46,568.82	\$ -
505	2014 CHEV SILVERADO 1500	\$ 14,900.00	5	\$ 8,691.67	2014	58.3%	204.9	227.3	1.109	\$ 16,528.89	\$ 6,887.04
506	2015 FREIGHTLINER 114SD	\$ 164,902.35	5	\$ 76,954.43	2015	46.7%	206.2	227.3	1.102	\$ 181,776.45	\$ 96,947.44
507	2015 CHEVROLET 2500	\$ 16,212.50	5	\$ 5,674.38	2015	35.0%	206.2	227.3	1.102	\$ 17,871.49	\$ 11,616.47
508	2017 CHEVROLET COLORADO	\$ 14,672.20	5	\$ 978.15	2017	6.7%	213.6	227.3	1.064	\$ 15,613.25	\$ 14,572.37
528	UPGRADING OF INSTRUMENT	\$ 13,960.00	50	\$ 6,025.90	1994	43.2%	104.4	227.3	2.177	\$ 30,393.75	\$ 17,274.16
560	ASSORTED W&S	\$ 65,157.68	50	\$ 33,881.84	1990	52.0%	94.3	227.3	2.410	\$ 157,055.56	\$ 75,387.05

Water System Value Replacement Cost New Less Depreciation \$ 6,369,463.77

Less: Debt Appendix B \$ 62,763.86
Less: Grants, Contributions, Etc. \$ -
\$ 62,763.86

Water System Value for System Development Fee \$ 6,306,699.92

Water System Total Equivalent Residential Units by Capacity Appendix E 15,500

Water System Equivalent Residential Unit (ERU) SDF \$ 406.88

- [1] June 30, 2018 Financial Data
- [2] June 30, 2018 Financial Data
- [3] June 30, 2018 Financial Data
- [4] June 30, 2018 Financial Data
- [5] Percent of Asset Depreciation [3]/[1]
- [6] RSMean Index - January 2019 for Installed Date
- [7] RSMean Index - January 2019 for January 2018
- [8] Replacement Cost New Factor [8]/[7]
- [9] Replacement Cost New [1]X[8]
- [10] Replacement Cost New Less Depreciation [1]-[5] x [9]
Assets split 50/50 Water & Waste Water Systems

WASTEWATER ASSETS AND SDF CALCULATION

Smithfield Waste Water System		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
CODE	Asset Description	Original Cost	Dep Yrs	Accrued Depreciation	Yr Install	% Dep	Ins Yr Index	2018 RCN Index Factor	RCN	RCNLD	
39	PINE ACRES LIFT STATION PU	\$ 25,000.00	30	\$ 23,193.61	1988	92.8%	89.9	227.3 2.528	\$ 63,209.12	\$ 4,567.21	
40	BELMONT LIFT STATION PUMP	\$ 75,000.00	30	\$ 69,587.74	1988	92.8%	89.9	227.3 2.528	\$ 189,627.36	\$ 13,696.81	
41	JCC LIFT STATION	\$ 11,000.00	30	\$ 10,206.39	1988	92.8%	89.9	227.3 2.528	\$ 27,812.01	\$ 2,006.54	
42	HOWARD JOHNSON LIFT STAT	\$ 30,000.00	30	\$ 27,832.74	1988	92.8%	89.9	227.3 2.528	\$ 75,850.95	\$ 5,479.62	
43	SHALLCROSS LIFT STATION P	\$ 25,000.00	30	\$ 23,193.61	1988	92.8%	89.9	227.3 2.528	\$ 63,209.12	\$ 4,567.21	
44	HOUSING PROELT LIFT STATIO	\$ 20,000.00	30	\$ 18,556.39	1988	92.8%	89.9	227.3 2.528	\$ 50,567.30	\$ 3,649.97	
202	GRINDER - LIFT STATION #3	\$ 29,688.00	10	\$ 6,185.00	2015	20.8%	206.2	227.3 1.102	\$ 32,725.91	\$ 25,908.01	
205	AIR COMPRESSOR DOOSAN PO	\$ 21,924.00	10	\$ 3,836.70	2015	17.5%	206.2	227.3 1.102	\$ 24,167.44	\$ 19,938.13	
210	GENERATOR ENGINE PUMP ST	\$ 13,063.67	10	\$ 653.18	2017	5.0%	213.6	227.3 1.064	\$ 13,901.56	\$ 13,206.48	
211	DRI-PRIME DIESEL PUMP	\$ 39,747.97	10	\$ 331.23	2017	0.8%	213.6	227.3 1.064	\$ 42,297.35	\$ 41,944.87	
218	CONTROL PANEL PUMP STATI	\$ 45,840.00	10	\$ 1,146.00	2017	2.5%	213.6	227.3 1.064	\$ 48,780.11	\$ 47,560.61	
318	IMPROVEMENTS TO LIFT STAT	\$ 932,026.00	30	\$ 341,742.83	2006	36.7%	162.0	227.3 1.403	\$ 1,397,713.02	\$ 828,218.30	
319	BOOKER DAIRY SEWER LINE	\$ 110,000.00	30	\$ 22,000.02	2011	20.0%	191.2	227.3 1.189	\$ 130,768.83	\$ 104,615.04	
323	WEST SMITHFIELD I&I	\$ 49,848.00	20	\$ 9,969.60	2013	20.0%	201.2	227.3 1.130	\$ 56,314.37	\$ 45,051.49	
325	SEWER LINE REHAB I-95	\$ 176,517.63	20	\$ 35,303.52	2013	20.0%	201.2	227.3 1.130	\$ 199,415.79	\$ 159,532.64	
326	HWY 70 BRIDGE REPLACEMEN	\$ 372,809.56	20	\$ 55,921.44	2014	15.0%	204.9	227.3 1.109	\$ 413,565.71	\$ 351,530.84	
552	CUR OFF VALUE IN SERV	\$ 44,325.00	50	\$ 24,675.14	1988	55.7%	89.9	227.3 2.528	\$ 112,069.77	\$ 49,682.02	
569	WEST SMITHFIELD WASTEWA	\$ 7,957.05	50	\$ 2,652.26	1999	33.3%	117.6	227.3 1.933	\$ 15,379.57	\$ 10,253.22	
573	MAMHOLE IN SERV 1032	\$ 33,930.00	50	\$ 18,887.70	1988	55.7%	89.9	227.3 2.528	\$ 85,787.42	\$ 38,032.42	
574	6" SEWER LINE 15,775 FT	\$ 31,550.00	50	\$ 17,194.18	1989	54.5%	92.1	227.3 2.468	\$ 77,864.44	\$ 35,429.73	
575	8" SEWER LINE 170,797 FT	\$ 170,797.00	50	\$ 93,084.08	1989	54.5%	92.1	227.3 2.468	\$ 421,521.80	\$ 191,793.12	
576	10" SEWER LINE 13,875 FT	\$ 41,625.00	50	\$ 22,686.48	1989	54.5%	92.1	227.3 2.468	\$ 102,729.23	\$ 46,739.69	
577	12" SEWER LINE 22,300 FT	\$ 66,900.00	50	\$ 36,460.50	1989	54.5%	92.1	227.3 2.468	\$ 165,107.17	\$ 75,123.76	
578	WEST SMITHFIELD SEWER SYS	\$ 1,969,667.65	50	\$ 1,222,766.63	1994	62.1%	104.4	227.3 2.177	\$ 4,288,366.44	\$ 1,626,155.19	
579	INSTALL MANHOLE 120 SEWE	\$ 8,500.00	50	\$ 3,499.47	1995	41.2%	107.6	227.3 2.112	\$ 17,955.86	\$ 10,563.39	
580	REPAIR TO 12" SEWER 2ND ST	\$ 7,297.50	50	\$ 2,979.59	1996	40.8%	110.2	227.3 2.063	\$ 15,051.92	\$ 8,906.18	
581	12" SEWERLINE REPLACEMEN	\$ 31,890.00	50	\$ 12,756.00	1996	40.0%	110.2	227.3 2.063	\$ 65,776.74	\$ 39,466.05	
582	SEWERLINE CONSTRUCTION	\$ 44,406.00	50	\$ 16,726.26	1997	37.7%	112.8	227.3 2.015	\$ 89,481.24	\$ 55,776.64	
583	REPLACE SEWER LINE	\$ 42,227.00	50	\$ 13,512.70	2001	32.0%	125.1	227.3 1.817	\$ 76,724.20	\$ 52,172.35	
584	PUMP	\$ 18,000.00	50	\$ 10,020.00	1988	55.7%	89.9	227.3 2.528	\$ 45,510.57	\$ 20,176.35	
595	PUMP STATION #1 TOP REPLA	\$ 52,760.00	20	\$ 8,353.67	2014	15.8%	204.9	227.3 1.109	\$ 58,527.81	\$ 49,260.90	
597	SEWER LINE REPLACEMENT R	\$ 25,589.00	20	\$ 2,558.90	2015	10.0%	206.2	227.3 1.102	\$ 28,207.47	\$ 25,386.72	
598	PUMPSTATION #7 RENO	\$ 116,821.08	20	\$ 1,460.26	2017	1.2%	213.6	227.3 1.064	\$ 124,313.82	\$ 122,759.90	
36	CONSTRUCTION OF NEW OFFICE	\$ 3,476.87	30	\$ 2,652.80	1994	76.3%	104.4	227.3 2.177	\$ 7,569.84	\$ 1,794.16	
193	TELEPHONE SYSTEM	\$ 912.00	6	\$ 671.34	2013	73.6%	201.2	227.3 1.130	\$ 1,030.31	\$ 271.88	
196	NESHAP COMPLIANCE SERVIC	\$ 11,250.00	10	\$ 3,375.00	2014	30.0%	204.9	227.3 1.109	\$ 12,479.87	\$ 8,735.91	
197	NESHAP COMPLIANCE SERVIC	\$ 11,250.00	10	\$ 3,375.00	2014	30.0%	204.9	227.3 1.109	\$ 12,479.87	\$ 8,735.91	
199	MINI EXCAVATOR - CATERPIL	\$ 30,439.50	10	\$ 8,370.87	2014	27.5%	204.9	227.3 1.109	\$ 33,767.20	\$ 24,481.21	
201	SCADA - 9 STATIONS/FLOWER	\$ 25,876.50	10	\$ 7,116.04	2014	27.5%	204.9	227.3 1.109	\$ 28,705.36	\$ 20,811.38	
203	BACKHOE LOADER 420F	\$ 40,750.00	10	\$ 7,470.84	2015	18.3%	206.2	227.3 1.102	\$ 44,919.86	\$ 36,684.55	
498	2004 FORD F-250	\$ 6,919.50	83.3	\$ 6,919.50	2004	100.0%	143.7	227.3 1.582	\$ 10,945.04	\$ -	
504	2012 FORD F750 TRUCK	\$ 41,221.50	5	\$ 41,221.50	2013	100.0%	201.2	227.3 1.130	\$ 46,568.82	\$ -	

CODE	Smithfield Waste Water System Asset Description	[1] Original Cost	[2] Dep Yrs	[3] Accrued Depreciation	[4] Yr Install	[5] % Dep	[6] Ins Yr Index	[7] 2018 Index	[8] RCN Factor	[9] RCN	[10] RCNLD	
505	2014 CHEV SILVERADO 1500	\$ 14,900.00	5	\$ 8,691.67	2014	58.3%	204.9	227.3	1.109	\$ 16,528.89	\$ 6,887.04	
506	2015 FREIGHTLINER 114SD	\$ 164,902.35	5	\$ 76,954.43	2015	46.7%	206.2	227.3	1.102	\$ 181,776.45	\$ 96,947.44	
507	2015 CHEVROLET 2500	\$ 16,212.50	5	\$ 5,674.38	2015	35.0%	206.2	227.3	1.102	\$ 17,871.49	\$ 11,616.47	
508	2017 CHEVROLET COLORADO	\$ 14,672.20	5	\$ 978.15	2017	6.7%	213.6	227.3	1.064	\$ 15,613.25	\$ 14,572.37	
528	UPGRADING OF INSTRUMENT	\$ 13,960.00	50	\$ 6,025.30	1994	43.2%	104.4	227.3	2.177	\$ 30,393.75	\$ 17,274.16	
560	ASSORTED W&S	\$ 65,157.68	50	\$ 33,881.84	1990	52.0%	94.3	227.3	2.410	\$ 157,055.56	\$ 75,387.05	
Waste Water System Value Replacement Cost New Less Depreciation											\$ 4,453,350.94	
Less Debt											Appendix B	\$ 62,763.86
Less Grants, Contributions, Etc.												\$ -
											\$ 62,763.86	
Waste Water System Value for System Development Fee											\$ 4,390,587.09	
Waste Water System Total Equivalent Residential Units by Capacity											Appendix E	20,000
Waste Water System Equivalent Residential Unit (ERU) SDF											\$ 219.53	

- [1] June 30, 2018 Financial Data
- [2] June 30, 2018 Financial Data
- [3] June 30, 2018 Financial Data
- [4] June 30, 2018 Financial Data
- [5] Percent of Asset Depreciation [3]/[1]
- [6] RSMears Index - January 2019 for Installed Date
- [7] RSMears Index - January 2019 for January 2018
- [8] Replacement Cost New Factor [8]/[7]
- [9] Replacement Cost New [1]x[8]
- [10] Replacement Cost New Less Depreciation ([1]-[5])x [9]
Assets split 50/50 Water & Waste Water Systems

CALCULATION OF SYSTEM DEVELOPMENT FEES (Incremental)

The following chart shows the calculation of each system's (Water or Waste Water) SDF / ERU for Incremental costs, taking into account each projects in progress which are not in the current asset inventory, for which debt has been incurred, and payments (principal and interest) that have been made through December 31, 2018.

Also shown is a comparison of the Incremental SDF / ERU based on the respective system capacity versus the total cost per existing ERU based on the system peak capacity to date to illustrate the credit (reduction of cost per ERU) for incremental customers versus the existing customer peak capacity.

CALCULATION OF SYSTEM DEVELOPMENT FEES (Incremental)

Project Description	[1] Approved Projects in Progress (Capital Cost)	[2] Approved Projects in Progress (Total Including Interest)	[3] Approved Projects in Progress (Interest)	[3] Approved Projects (Outstanding Debt Principal)	[4] Approved Project Asset Value Inc. SDF (Principal To Date)	[5] To Date Cost & Debt Existing Customers	Cost To Date / Existing Customer Peak ERU*	Incremental SDF / ERU Capacity [4] / [5]	Credit % of Incremental SDF VS Existing Customers Cost [=>25%]
Waste Water System									
I & I SAND REMOVAL	WW \$1,430,000	\$1,661,051	\$231,051	\$1,112,405	\$317,595	\$415,285	\$32.84	\$15.88	52%
W&WW PROJECTS (WASTE WATER PORTION)	WW \$499,750	\$555,551	\$55,801	\$384,244	\$115,506	\$138,888	\$10.98	\$5.78	47%
	WW \$1,929,750	\$2,216,602	\$286,852	\$1,496,650	\$433,100	\$554,172	\$43.83	\$21.66	51%
Water System									
WATER PROJECTS	W \$681,750	\$757,872	\$76,122	\$524,179	\$157,571	\$189,468	\$14.98	\$10.17	32%
BOOKER DAIRY RELOCATION	W \$2,037,249	\$2,195,727	\$158,478	\$1,624,610	\$412,639	\$470,513	\$37.21	\$26.62	28%
	W \$2,718,999	\$2,953,599	\$234,600	\$2,148,790	\$570,209	\$659,981	\$52.19	\$36.79	30%
							\$96.02	\$58.44	39%

Incremental Cost Calculation Use Only For Approved Capital Improvement Projects (Under Construction, Debt or Obligation Issued and Not In Assets)

** SDF WASTE WATER TOTAL ERU (SYSTEM CAPACITY)	Appendix E	20,000
** SDF WATER TOTAL ERU (SYSTEM CAPACITY)	Appendix E	35,500
* RETAIL WASTE WATER TOTAL ERU (EXISTING CUSTOMER PEAK USAGE)	Appendix E	12,645
* RETAIL WATER TOTAL ERU (EXISTING CUSTOMER PEAK USAGE)	Appendix E	12,645

APPENDICES AND ADDITIONAL INFORMATION

**GENERAL ASSEMBLY OF NORTH CAROLINA SESSION 2017 SESSION LAW 2017-138
HOUSE BILL 436**

H436-v-6

AN ACT TO PROVIDE FOR UNIFORM AUTHORITY TO IMPLEMENT SYSTEM DEVELOPMENT FEES FOR PUBLIC WATER AND SEWER SYSTEMS IN NORTH CAROLINA AND TO CLARIFY THE APPLICABLE STATUTE OF LIMITATIONS.

The General Assembly of North Carolina enacts:

SECTION 1. Chapter 162A of the General Statutes is amended by adding a new Article to read:

"Article 8.

"System Development Fees.

"§ 162A-200. Short title.

This Article shall be known and may be cited as the "Public Water and Sewer System Development Fee Act."

"§ 162A-201. Definitions.

The following definitions apply in this Article:

(1) Capital improvement. – A planned facility or expansion of capacity of an existing facility other than a capital rehabilitation project necessitated by and attributable to new development.

(2) Capital rehabilitation project. – Any repair, maintenance, modernization, upgrade, update, replacement, or correction of deficiencies of a facility, including any expansion or other undertaking to increase the preexisting level of service for existing development.

(3) Existing development. – Land subdivisions, structures, and land uses in existence at the start of the written analysis process required by G.S. 162A-205, no more than one year prior to the adoption of a system development fee.

(4) Facility. – A water supply, treatment, storage, or distribution facility, or a wastewater collection, treatment, or disposal facility, including for reuse or reclamation of water, owned or operated, or to be owned or operated, by a local governmental unit and land associated with such facility.

(5) Local governmental unit. – Any political subdivision of the State that owns or operates a facility, including those owned or operated pursuant to local act of the General Assembly or pursuant to Part 2 of Article 2 of Chapter 130A, Article 15 of Chapter 153A, Article 16 of Chapter 160A, or Articles 1, 4, 5, 5A, or 6 of Chapter 162A of the General Statutes.

(6) New development. – Any of the following occurring after the date a local government begins the written analysis process required by G.S. 162A-205, no more than one year prior to the adoption of a system development fee, which increases the capacity necessary to serve that development:

a. The subdivision of land.

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b. The construction, reconstruction, redevelopment, conversion, structural alteration, relocation, or enlargement of any structure which increases the number of service units.

c. Any use or extension of the use of land which increases the number of service units.

(7) Service. – Water or sewer service, or water and sewer service, provided by a local governmental unit.

(8) Service unit. – A unit of measure, typically an equivalent residential unit, calculated in accordance with generally accepted engineering or planning standards.

(9) System development fee. – 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, as provided in this Article. The term includes amortized charges,

lump-sum charges, and any other fee that functions as described by this definition regardless of terminology. The term does not include any of the following:

- a. A charge or fee to pay the administrative, plan review, or inspection costs associated with permits required for development.
- b. Tap or hookup charges for the purpose of reimbursing the local governmental unit for the actual cost of connecting the service unit to the system.
- c. Availability charges.
- d. Dedication of capital improvements on-site, adjacent, or ancillary to a development absent a written agreement providing for credit or reimbursement to the developer pursuant to G.S. 153A-280, 153A-451, 160A-320, 160A-499 or Part 3A of Article 18, Chapter 153A or Part 3D of Article 19, Chapter 160A of the General Statutes.
- e. Reimbursement to the local governmental unit for its expenses in constructing or providing for water or sewer utility capital improvements adjacent or ancillary to the development if the owner or developer has agreed to be financially responsible for such expenses; however, such reimbursement shall be credited to any system development fee charged as set forth in G.S. 162A-207(c).

(10) System development fee analysis. – An analysis meeting the requirements of G.S. 162A-205.

"§ 162A-202. Reserved.

"§ 162A-203. Authorization of system development fee.

- (a) A local governmental unit may adopt a system development fee for water or sewer service only in accordance with the conditions and limitations of this Article.
- (b) A system development fee adopted by a local governmental unit under any lawful authority other than this Article and in effect on October 1, 2017, shall be conformed to the requirements of this Article not later than July 1, 2018.

"§ 162A-204. Reserved.

"§ 162A-205. Supporting analysis.

A system development fee shall be calculated based on a written analysis, which may constitute or be included in a capital improvements plan, that:

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- (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.

"§ 162A-206. Reserved.

"§ 162A-207. Minimum requirements.

(a) Maximum. – A system development fee shall not exceed that calculated based on the system development fee analysis.

(b) Revenue Credit. – In applying the incremental cost or marginal cost, or the combined cost, method to calculate a system development fee with respect to water or sewer capital improvements, the system development fee analysis must include as part of that methodology a credit against the projected aggregate cost of water or sewer capital improvements. That credit shall be determined based upon generally accepted calculations and shall reflect a deduction of either the outstanding debt principal or the present value of projected water and sewer revenues received by the local governmental unit for the capital improvements necessitated by and attributable to such new development, anticipated over the course of the planning horizon. In no case shall the credit be less than twenty-five percent (25%) of the aggregate cost of capital improvements.

(c) Construction or Contributions Credit. – In calculating the system development fee with respect to new development, the local governmental unit shall credit the value of costs in excess of the development's proportionate share of connecting facilities required to be oversized for use of others outside of the development. No credit shall be applied, however, for water or sewer capital improvements on-site or to connect new development to water or sewer facilities.

"§ 162A-208. Reserved.

"§ 162A-209. Adoption and periodic review.

(a) For not less than 45 days prior to considering the adoption of a system development fee analysis, the local governmental unit shall post the analysis on its Web site and solicit and furnish a means to submit written comments, which shall be considered by the preparer of the analysis for possible modifications or revisions.

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(b) After expiration of the period for posting, the governing body of the local governmental unit shall conduct a public hearing prior to considering adoption of the analysis with any modifications or revisions.

(c) The local governmental unit shall publish the system development fee in its annual budget or rate plan or ordinance. The local governmental unit shall update the system development fee analysis at least every five years.

"§ 162A-210. Reserved.

"§ 162A-211. Use and administration of revenue.

(a) Revenue from system development fees calculated using the incremental cost method or marginal cost method, exclusively or as part of the combined cost method, shall be expended only to pay:

(1) Costs of constructing capital improvements including, and limited to, any of the following:

a. Construction contract prices.

b. Surveying and engineering fees.

c. Land acquisition cost.

d. Principal and interest on bonds, notes, or other obligations issued by or on behalf of the local governmental unit to finance any costs for an item listed in sub-subdivisions a. through c. of this subdivision.

(2) Professional fees incurred by the local governmental unit for preparation of the system development fee analysis.

(3) If no capital improvements are planned for construction within five years or the foregoing costs are otherwise paid or provided for, then principal and interest on bonds, notes, or other obligations issued by or on behalf of a local governmental unit to finance the construction or acquisition of existing capital improvements.

(b) Revenue from system development fees calculated using the buy-in method may be expended for previously completed capital improvements for which capacity exists and for capital

rehabilitation projects. The basis for the buy-in calculation for previously completed capital improvements shall be determined by using a generally accepted method of valuing the actual or replacement costs of the capital improvement for which the buy-in fee is being collected less depreciation, debt credits, grants, and other generally accepted valuation adjustments.

(c) A local governmental unit may pledge a system development fee as security for the payment of debt service on a bond, note, or other obligation subject to compliance with the foregoing limitations.

(d) System development fee revenues shall be accounted for by means of a capital reserve fund established pursuant to Part 2 of Article 3 of Chapter 159 of the General Statutes and limited as to expenditure of funds in accordance with this section.

"§ 162A-212. Reserved.

"§ 162A-213. Time for collection of system development fees.

For new development involving the subdivision of land, the system development fee shall be collected by a local governmental unit either at the time of plat recordation or when water or sewer service for the subdivision or other development is committed by the local governmental unit. For all other new development, the local governmental unit shall collect the system development fee at the time of application for connection of the individual unit of development to the service or facilities.

"§ 162A-214. Reserved.

"§ 162A-215. Narrow construction.

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Notwithstanding G.S. 153A-4 and G.S. 160A-4, in any judicial action interpreting this Article, all powers conferred by this Article shall be narrowly construed to ensure that system development fees do not unduly burden new development."

SECTION 2. G.S. 130A-64 reads as rewritten:

"§ 130A-64. Service charges and rates.

(a) A sanitary district board shall apply service charges and rates based upon the exact benefits derived. These service charges and rates shall be sufficient to provide funds for the maintenance, adequate depreciation and operation of the work of the district. If reasonable, the service charges and rates may include an amount sufficient to pay the principal and interest maturing on the outstanding bonds and, to the extent not otherwise provided for, bond anticipation notes of the district. Any surplus from operating revenues shall be set aside as a separate fund to be applied to the payment of interest on or to the retirement of bonds or bond anticipation notes. The sanitary district board may modify and adjust these service charges and rates.

(b) The district board may require system development fees only in accordance with Article 8 of Chapter 162A of the General Statutes."

SECTION 3. G.S. 153A-277 reads as rewritten:

"§ 153A-277. Authority to fix and enforce rates.

(a) A county may establish and revise from time to time schedules of rents, rates, fees, charges, and penalties for the use of or the services furnished or to be furnished by a public enterprise. Schedules of rents, rates, fees, charges, and penalties may vary for the same class of service in different areas of the county and may vary according to classes of service, and different schedules may be adopted for services provided outside of the county. A county may include a fee relating to subsurface discharge wastewater management systems and services on the property tax bill for the real property where the system for which the fee is imposed is located.

...

(a2) A county may require system development fees only in accordance with Article 8 of Chapter 162A of the General Statutes.

...."

SECTION 4.(a) G.S. 160A-314 reads as rewritten:

"§ 160A-314. Authority to fix and enforce rates.

(a) A city may establish and revise from time to time schedules of rents, rates, fees, charges, and penalties for the use of or the services furnished or to be furnished by any public enterprise. Schedules of rents, rates, fees, charges, and penalties may vary according to classes of service, and different schedules may be adopted for services provided outside the corporate limits of the city.

...

(e) A city may require system development fees only in accordance with Article 8 of Chapter 162A of the General Statutes."

SECTION 4.(b) G.S. 160A-317 is amended by adding a new subsection to read:

"(a4) System Development Fees. – A city may require system development fees only in accordance with Article 8 of Chapter 162A of the General Statutes."

SECTION 5.(a) G.S. 162A-6(a) is amended by adding a new subdivision to read:

"(9a) To impose and require system development fees only in accordance with Article 8 of this Chapter."

SECTION 5.(b) G.S. 162A-9 is amended by adding a new subsection to read:

"(a5) An authority may require system development fees only in accordance with Article 8 of this Chapter."

SECTION 6.(a) G.S. 162A-36(a) is amended by adding a new subdivision to read:

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"(8a) To impose and require system development fees only in accordance with Article 8 of this Chapter."

SECTION 6.(b) G.S. 162A-49 reads as rewritten:

"§ 162A-49. Rates and charges for services.

(a) The district board may fix, and may revise from time to time, rents, rates, fees and other charges for the use of land for the services furnished or to be furnished by any water system or sewerage system or both. Such rents, rates, fees and charges shall not be subject to supervision or regulation by any bureau, board, commission, or other agency of the State or of any political subdivision. Any such rents, rates, fees and charges pledged to the payment of revenue bonds of the district shall be fixed and revised so that the revenues of the water system or sewerage system or both, together with any other available funds, shall be sufficient at all times to pay the cost of maintaining, repairing and operating the water system or the sewerage system or both, the revenues of which are pledged to the payment of such revenue bonds, including reserves for such purposes, and to pay the interest on and the principal of such revenue bonds as the same shall become due and payable and to provide reserves therefor. If any such rents, rates, fees and charges are pledged to the payment of any general obligation bonds issued under this Article, such rents, rates, fees and charges shall be fixed and revised so as to comply with the requirements of such pledge. The district board may provide methods for collection of such rents, rates, fees and charges and measures for enforcement of collection thereof, including penalties and the denial or discontinuance of service.

(b) The district board may require system development fees only in accordance with Article 8 of this Chapter."

SECTION 7.(a) G.S. 162A-69 is amended by adding a new subdivision to read:

"(8a) To impose and require system development fees only in accordance with Article 8 of this Chapter."

SECTION 7.(b) G.S. 162A-72 reads as rewritten:

"§ 162A-72. Rates and charges for services.

(a) The district board may fix, and may revise from time to time, rents, rates, fees and other charges for the use of and for the services furnished or to be furnished by any sewerage system. Such rents, rates, fees and charges shall not be subject to supervision or regulation by any bureau, board, commission, or other agency of the State or of any political subdivision. Any such rents, rates, fees and charges pledged to the payment of revenue bonds of the district shall be fixed and

revised so that the revenues of the sewerage system, together with any other available funds, shall be sufficient at all times to pay the cost of maintaining, repairing and operating the sewerage system the revenues of which are pledged to the payment of such revenue bonds, including reserves for such purposes, and to pay the interest on and the principal of such revenue bonds as the same shall become due and payable and to provide reserves therefor. If any such rents, rates, fees and charges are pledged to the payment of any general obligation bonds issued under this Article, such rents, rates, fees and charges shall be fixed and revised so as to comply with the requirements of such pledge. The district board may provide methods for collection of such rents, rates, fees and charges and measures for enforcement of collection thereof, including penalties and the denial or discontinuance of service.

(b) The district board may require system development fees only in accordance with Article 8 of this Chapter."

SECTION 8. G.S. 162A-85.13 is amended by adding a new subsection to read:

"(a1) The district board may require system development fees only in accordance with Article 8 of this Chapter."

SECTION 9. G.S. 162A-88 reads as rewritten:

"§ 162A-88. District is a municipal corporation.

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(a) The inhabitants of a county water and sewer district created pursuant to this Article are a body corporate and politic by the name specified by the board of commissioners. Under that name they are vested with all the property and rights of property belonging to the corporation; have perpetual succession; may sue and be sued; may contract and be contracted with; may acquire and hold any property, real and personal, devised, sold, or in any manner conveyed, dedicated to, or otherwise acquired by them, and from time to time may hold, invest, sell, or dispose of the same; may have a common seal and alter and renew it at will; may establish, revise and collect rates, fees or other charges and penalties for the use of or the services furnished or to be furnished by any sanitary sewer system, water system or sanitary sewer and water system of the district; and may exercise those powers conferred on them by this Article.

(b) The district board may require system development fees only in accordance with Article 8 of this Chapter."

SECTION 10.(a) G.S. 1-52(15) reads as rewritten:

"(15) For the recovery of taxes paid as provided in G.S. 105-381.G.S. 105-381 or for the recovery of an unlawful fee, charge, or exaction collected by a county, municipality, or other unit of local government for water or sewer service or water and sewer service."

SECTION 10.(b) This section is to clarify and not alter G.S. 1-52.

SECTION 11. Sections 1 through 9 of this act become effective October 1, 2017, and apply to system development fees imposed on or after that date. Section 10 of this act, being a clarifying amendment, has retroactive effect and applies to claims accrued or pending prior to and after the date that section becomes law. Nothing in this act provides retroactive authority for any system development fee, or any similar fee for water or sewer services to be furnished, collected by a local governmental unit prior to October 1, 2017. The remainder of this act is effective when it becomes law and applies to claims accrued or pending prior to and after that date.

In the General Assembly read three times and ratified this the 29th day of June, 2017.

s/ Daniel J. Forest

President of the Senate

s/ Tim Moore

Speaker of the House of Representatives

s/ Roy Cooper

Governor Approved 4:13 p.m. this 20th day of July, 2017

Appendix B

Debt Town of Smithfield 2017-2018 Audit Water / Waste Water (For Buy-In SDF Calculation)

TOWN OF SMITHFIELD
Water & Sewer Fund
Debt Service

Debt for Assets in Inventory - Used for Buy-In SDF Calculation

Debt for Assets in Inventory - Used for Buy-In SDF Calculation

G/L Account#	Description	Lender	Account#	Loan Amount	FY 17-18 Principle	FY 17-18 Interest	FY 17-18 Total Paid	Date of Payment	Loan Balance
30-71-7240-5400-9502	Sewer Loan	NC DENR	H-SRL-T-96-0322	408,220.00	20,411.00	306.17	306.17	4/13/2018	0.00
30-71-7240-5400-9503	Equipment Loan 83% Joint loan with Electric 31-7250-0001	KS Bank	10153252	407,683.55 of 491,185.00	41,155.63 40,825.74	1,284.64 1,614.53	42,440.27 42,440.27	5/11/2018 11/17/2017	125,527.71
30-71-7240-5400-9505	I & J Sand Removal	Four Oaks	58262	62,886.21	63,876.72	20,170.73	83,056.94	8/18/2017	1,178,375.70
30-71-7240-5400-9506	Water/Sewer Projects	BB&T	99330035470003	54,609.50	55,171.98	11,061.64	65,671.14	10/13/2017	964,164.08
30-71-7240-5400-9507	FY17 Sewer Projects								
30-71-7240-5400-9508	Booker Dairy Rd	BB&T	9933003547	136,159.55	137,541.57	20,678.08	156,837.63	9/20/2017	1,763,547.88

Allocation of Debt Service by Utility

Allocation of Debt Service by Utility	Loan Balance	Water Allocation	Waste Water Allocation
30-71-7240-5400-9503	125,527.71	62,763.86	62,763.86
30-71-7240-5400-9505		50%	50%
30-71-7240-5400-9506			
30-71-7240-5400-9508			

TOTAL DEBT FOR SDF BUY-IN ANALYSIS

\$62,763.86 \$62,763.86

Appendix C

(Not Used)

Historical Cost Indexes

The table below lists both the RSMeans® historical cost index based on Jan. 1, 1993 = 100 as well as the estimated value of an index based on Jan. 1, 2019 costs. Since the Jan. 1, 2019 figure is estimated, space is left to write in the actual index figures as they become available through the quarterly RSMeans Construction Cost Indexes.

To compute the actual index based on Jan. 1, 2019 = 100, divide the historical cost index for a particular year by the actual Jan. 1, 2019 construction cost index. Space has been left to advance the index figures as the year progresses.

Year	Historical Cost Index Jan. 1, 1993 = 100		Current Index Based on Jan. 1, 2019 = 100		Year	Historical Cost Index Jan. 1, 1993 = 100		Current Index Based on Jan. 1, 2019 = 100		Year	Historical Cost Index Jan. 1, 1993 = 100		Current Index Based on Jan. 1, 2019 = 100	
	Est.	Actual	Est.	Actual		Actual	Est.	Actual	Actual		Est.	Actual		
Oct 2019*					July 2004	143.7	63.2			July 1986	84.2	37.1		
July 2019*					2003	132.0	58.1			1985	82.6	36.3		
April 2019*					2002	128.7	56.6			1984	82.0	36.1		
Jan 2019*	227.3		100.0	100.0	2001	125.1	55.0			1983	80.2	35.3		
July 2018		222.9	98.1		2000	120.9	53.2			1982	76.1	33.5		
2017		213.6	94.0		1999	117.6	51.7			1981	70.0	30.8		
2016		207.3	91.2		1998	115.1	50.6			1980	62.9	27.7		
2015		206.2	90.7		1997	112.8	49.6			1979	57.8	25.4		
2014		204.9	90.1		1996	110.2	48.5			1978	53.5	23.5		
2013		201.2	88.5		1995	107.6	47.3			1977	49.5	21.8		
2012		194.6	85.6		1994	104.4	45.9			1976	46.9	20.6		
2011		191.2	84.1		1993	101.7	44.7			1975	44.8	19.7		
2010		183.5	80.7		1992	93.4	43.7			1974	41.4	18.2		
2009		180.1	79.2		1991	96.8	42.6			1973	37.7	16.6		
2008		180.4	79.4		1990	94.3	41.5			1972	34.6	15.3		
2007		169.4	74.5		1989	92.1	40.5			1971	32.1	14.1		
2006		162.0	71.3		1988	89.9	39.5			1970	28.7	12.6		
2005		151.6	66.7		1987	87.7	38.6			1969	26.9	11.8		

Adjustments to Costs

The "Historical Cost Index" can be used to convert national average building costs at a particular time to the appropriate building costs for some other time.

Time Adjustment Using the Historical Cost Indexes:

$$\frac{\text{Index for Year A}}{\text{Index for Year B}} \times \text{Cost in Year B} = \text{Cost in Year A}$$

Example:

Estimate and compare construction costs for different years in the same city.

To estimate the national average construction cost of a building in 1970, knowing that it cost \$900,000 in 2019:

$$\text{INDEX in 1970} = 28.7$$

$$\text{INDEX in 2019} = 227.3$$

$$\frac{\text{INDEX 1970}}{\text{INDEX 2019}} \times \text{Cost 2019} = \text{Cost 1970}$$

$$\frac{28.7}{227.3} \times \$900,000 = .126 \times \$900,000 = \$113,400$$

The construction cost of the building in 1970 was \$113,400.

Note: The city cost indexes for Canada can be used to convert U.S. national averages to local costs in Canadian dollars.

Example:

To estimate and compare the cost of a building in Toronto, ON in 2019 with the known cost of \$600,000 (US\$) in New York, NY in 2019:

$$\text{INDEX Toronto} = 110.1$$

$$\text{INDEX New York} = 132.1$$

$$\frac{\text{INDEX Toronto}}{\text{INDEX New York}} \times \text{Cost New York} = \text{Cost Toronto}$$

$$\frac{110.1}{132.1} \times \$600,000 = .834 \times \$600,000 = \$500,076$$

The construction cost of the building in Toronto is \$500,076 (CNS\$).

*Historical Cost Index updates and other resources are provided on the following website:
<https://info.dodge.digitalland.com/rsmeans.html>

Appendix E
 CALCULATION OF SYSTEM EQUIVALENT RESIDENTIAL UNITS BY CAPACITY

Town of Smithfield

Miles of Line	91	miles Waste Water	127	miles Water
Daily Use	3,428	MGD Avg.	5,058	MGD Max
Water System Capacity	2,000	MGD	Permitted Capacity RE: Email UD 1/8/19 2.0 MGD Allocated to JCo. Utility:	
Waste Water System Capacity	2,000	MGD	Total Lift Station Capacity RE: Email UD 1/8/19 @ 80% Capacity	

ERU By Capacity * NC Administrative Code 15A NCAC02T.0114 for a three bedroom home based on 120 GPD per bedroom

ERU GPD Water use	400	GPD	Waste Water GPD / 0.9
ERU GPD Waste Water Use	360	GPD	*

Water System Capacity	5,200,000	GPD** /	400	GPD / ERU =	13,000	ERU TOTAL SYSTEM CAPACITY
Waste Water System Capacity	4,720,000	GPD /	360	GPD / ERU =	13,111	ERU TOTAL SYSTEM CAPACITY

** 2.0 MGD Allocated to Wholesale Sales

ERU By Actual Use * NC Administrative Code 15A NCAC02T.0114 for a three bedroom home based on 120 GPD per bedroom

ERU GPD Water use	400	GPD	Waste Water GPD / 0.9
ERU GPD Waste Water Use	360	GPD	*

Water System Peak Use Existing Customers	5,058,000	GPD** /	400	GPD / ERU =	12,645	ERU EXISTING CUSTOMER ESTIMATE BY US
WW System Peak / Existing Customers Estimate	4,552,200	GPD /	360	GPD / ERU =	12,645	ERU EXISTING CUSTOMER ESTIMATE BY US

** 2017 Peak Water Usage Reported Data to DWR and LWSP & WW Estimated by Water X 0.9

Appendix F

INCREMENTAL SDF CALCULATION (Principal Including All Payments to Date & Financing Model)

Allocation of Debt Service by Utility		Principal Payment to Date Through 12/31/2018	Water Allocation	Waste Water Allocation
30-71-7240-5400-9503	Equipment Loan 83% Joint loan with Electric 31-7250-0001	0.00	0.00	0.00
30-71-7240-5400-9505	I & I Sand Removal	317,594.79	50%	50%
30-71-7240-5400-9506	Water/Sewer Projects	273,076.18	57,570.62	115,303.56
30-71-7240-5400-9508	Booker Dairy Rd	412,638.74	127,188.88	42,498.76
			570,209.36	148,100.35

Principal Not in Inventory

Aug 2, 2016
Memo - T. Credle
/ G. Siles

Total Project Principal Paid to Date - Assets Not in Inventory (Incremental SDF)

I&I SAND REMOVAL

Loan \$1,430,000.00
Interest 2.90%
Year 10
Payment \$83,056.94

Period	Beginning Balance	Payment	Principal	Interest	Cummulative Principal	Cummulative Interest	Ending Balance
9/1/2016	\$1,430,000.00	\$83,056.94	\$61,861.17	\$21,195.77	\$61,861.17	\$21,195.77	\$1,368,138.83
3/1/2017	\$1,368,138.83	\$83,056.94	\$63,000.20	\$20,056.74	\$124,861.37	\$41,252.51	\$1,305,138.63
9/1/2017	\$1,305,138.63	\$83,056.94	\$62,886.21	\$20,170.73	\$187,747.58	\$61,423.24	\$1,242,252.42
3/1/2018	\$1,242,252.42	\$83,056.94	\$63,876.72	\$19,180.22	\$251,624.30	\$80,603.46	\$1,178,375.70
9/1/2018	\$1,178,375.70	\$83,056.94	\$65,970.49	\$17,086.45	\$317,594.79	\$97,689.91	\$1,112,405.21
3/1/2019	\$1,112,405.21	\$83,056.94	\$66,927.06	\$16,129.88	\$384,521.85	\$113,819.79	\$1,045,478.15
9/1/2019	\$1,045,478.15	\$83,056.94	\$67,897.51	\$15,159.43	\$452,419.36	\$128,979.22	\$977,580.64
3/1/2020	\$977,580.64	\$83,056.94	\$68,882.02	\$14,174.92	\$521,301.38	\$143,154.14	\$908,698.62
9/1/2020	\$908,698.62	\$83,056.94	\$69,880.81	\$13,176.13	\$591,182.19	\$156,330.27	\$838,817.81
3/1/2021	\$838,817.81	\$83,056.94	\$70,894.08	\$12,162.86	\$662,076.27	\$168,493.13	\$767,923.73
9/1/2021	\$767,923.73	\$83,056.94	\$71,922.05	\$11,134.89	\$733,998.32	\$179,628.02	\$696,001.68
3/1/2022	\$696,001.68	\$83,056.94	\$72,964.92	\$10,092.02	\$806,963.24	\$189,720.04	\$623,036.76
9/1/2022	\$623,036.76	\$83,056.94	\$74,022.91	\$9,034.03	\$880,986.15	\$198,754.07	\$549,013.85
3/1/2023	\$549,013.85	\$83,056.94	\$75,096.24	\$7,960.70	\$956,082.39	\$206,714.77	\$473,917.61
9/1/2023	\$473,917.61	\$83,056.94	\$76,185.13	\$6,871.81	\$1,032,267.52	\$213,586.58	\$397,732.48
3/1/2024	\$397,732.48	\$83,056.94	\$77,289.82	\$5,767.12	\$1,109,557.34	\$219,353.70	\$320,442.66
9/1/2024	\$320,442.66	\$83,056.94	\$78,410.52	\$4,646.42	\$1,187,967.86	\$224,000.12	\$242,032.14
3/1/2025	\$242,032.14	\$83,056.94	\$79,547.47	\$3,509.47	\$1,267,515.33	\$227,509.59	\$162,484.67
9/1/2025	\$162,484.67	\$83,056.94	\$80,700.91	\$2,356.03	\$1,348,216.24	\$229,865.62	\$81,783.76
3/1/2026	\$81,783.76	\$82,969.62	\$81,783.76	\$1,185.86	\$1,430,000.00	\$231,051.48	\$0.00
		\$1,430,000.00			\$1,430,000.00	\$231,051.48	Total Principal & Interest

W&S PROJECTS

Loan \$1,181,500.00
 Interest 1.03%
 Year 10
 Payment \$65,671.14

Period	Beginning Balance	Payment	Principal	Interest	Cummulative Principal	Cummulative Interest	Ending Balance
9/1/2016	\$1,181,500.00	\$65,671.14	\$53,501.69	\$12,169.45	\$53,501.69	\$12,169.45	\$1,127,998.31
3/1/2017	\$1,127,998.31	\$65,671.14	\$54,052.76	\$11,618.38	\$107,554.45	\$23,787.83	\$1,073,945.55
9/1/2017	\$1,073,945.55	\$65,671.14	\$54,609.50	\$11,061.64	\$162,163.95	\$34,849.47	\$1,019,336.05
3/1/2018	\$1,019,336.05	\$65,671.14	\$55,171.98	\$10,499.16	\$217,335.93	\$45,348.63	\$964,164.07
9/1/2018	\$964,164.07	\$65,671.14	\$55,740.25	\$9,930.89	\$273,076.18	\$55,279.52	\$908,423.82
3/1/2019	\$908,423.82	\$65,671.14	\$56,314.37	\$9,356.77	\$329,390.55	\$64,636.29	\$852,109.45
9/1/2019	\$852,109.45	\$65,671.14	\$56,894.41	\$8,776.73	\$386,284.96	\$73,413.02	\$795,215.04
3/1/2020	\$795,215.04	\$65,671.14	\$57,480.43	\$8,190.71	\$443,765.39	\$81,603.73	\$737,734.61
9/1/2020	\$737,734.61	\$65,671.14	\$58,072.47	\$7,598.67	\$501,837.86	\$89,202.40	\$679,662.14
3/1/2021	\$679,662.14	\$65,671.14	\$58,670.62	\$7,000.52	\$560,508.48	\$96,202.92	\$620,991.52
9/1/2021	\$620,991.52	\$65,671.14	\$59,274.93	\$6,396.21	\$619,783.41	\$102,599.13	\$561,716.59
3/1/2022	\$561,716.59	\$65,671.14	\$59,885.46	\$5,785.68	\$679,668.87	\$108,384.81	\$501,831.13
9/1/2022	\$501,831.13	\$65,671.14	\$60,502.28	\$5,168.86	\$740,171.15	\$113,553.67	\$441,328.85
3/1/2023	\$441,328.85	\$65,671.14	\$61,125.45	\$4,545.69	\$801,296.60	\$118,099.36	\$380,203.40
9/1/2023	\$380,203.40	\$65,671.14	\$61,755.04	\$3,916.10	\$863,051.64	\$122,015.46	\$318,448.36
3/1/2024	\$318,448.36	\$65,671.14	\$62,391.12	\$3,280.02	\$925,442.76	\$125,295.48	\$256,057.24
9/1/2024	\$256,057.24	\$65,671.14	\$63,033.75	\$2,637.39	\$988,476.51	\$127,932.87	\$193,023.49
3/1/2025	\$193,023.49	\$65,671.14	\$63,683.00	\$1,988.14	\$1,052,159.51	\$129,921.01	\$129,340.49
9/1/2025	\$129,340.49	\$65,671.14	\$64,338.93	\$1,332.21	\$1,116,498.44	\$131,253.22	\$65,001.56
3/1/2026	\$65,001.56	\$65,671.08	\$65,001.56	\$669.52	\$1,181,500.00	\$131,922.74	\$0.00
					\$1,313,422.74	Total Principal & Interest	
		\$131,922.74		WW	\$131,922.74	\$131,922.74	
		\$65,945.05		W	\$65,945.05	\$65,945.05	

Booker Dairy Relocation

Loan \$2,037,249.00
 Interest 1.02%
 Year 7
 Payment \$156,837.63

Period	Beginning Balance	Payment	Principal	Interest	Cummulative Principal	Cummulative Interest	Ending Balance
9/23/2017	\$2,037,249.00	\$156,837.63	\$136,159.55	\$20,678.08	\$136,159.55	\$20,678.08	\$1,901,089.45
3/23/2018	\$1,901,089.45	\$156,837.63	\$137,541.57	\$19,296.06	\$273,701.12	\$39,974.14	\$1,763,547.88
9/23/2018	\$1,763,547.88	\$156,837.63	\$138,937.62	\$17,900.01	\$412,638.74	\$57,874.15	\$1,624,610.26
3/23/2019	\$1,624,610.26	\$156,837.63	\$140,347.83	\$16,489.80	\$552,986.57	\$74,363.95	\$1,484,262.43
9/23/2019	\$1,484,262.43	\$156,837.63	\$141,772.36	\$15,065.27	\$694,758.93	\$89,429.22	\$1,342,490.07
3/23/2020	\$1,342,490.07	\$156,837.63	\$143,211.35	\$13,626.28	\$837,970.28	\$103,055.50	\$1,199,278.72
9/23/2020	\$1,199,278.72	\$156,837.63	\$144,664.95	\$12,172.68	\$982,635.23	\$115,228.18	\$1,054,613.77
3/23/2021	\$1,054,613.77	\$156,837.63	\$146,133.30	\$10,704.33	\$1,128,768.53	\$125,932.51	\$908,480.47
9/23/2021	\$908,480.47	\$156,837.63	\$147,616.55	\$9,221.08	\$1,276,385.08	\$135,153.59	\$760,863.92
3/23/2022	\$760,863.92	\$156,837.63	\$149,114.86	\$7,722.77	\$1,425,499.94	\$142,876.36	\$611,749.06
9/23/2022	\$611,749.06	\$156,837.63	\$150,628.38	\$6,209.25	\$1,576,128.32	\$149,085.61	\$461,120.68
3/23/2023	\$461,120.68	\$156,837.63	\$152,157.25	\$4,680.38	\$1,728,285.57	\$153,765.99	\$308,963.43
9/23/2023	\$308,963.43	\$156,837.63	\$153,701.65	\$3,135.98	\$1,881,987.22	\$156,901.97	\$155,261.78
3/23/2024	\$155,261.78	\$156,837.69	\$155,261.78	\$1,575.91	\$2,037,249.00	\$158,477.88	(\$0.00)
					\$1,957,26.88	Total Principal & Interest	

