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COST- JUSTIFIED WATER AND SEWER SYSTEM DEVELOPMENT FEES

CITY OF BESSEMER CITY
NORTH CAROLINA

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NC Administrative Code 15A NCAC 18C .0409

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Executive Summary:

The North Carolina General Assembly passed Session Law 2017-138 House Bill 436 (HB 436) in July 2017 amending Chapter 162A of the General Statutes by adding "Article 8, System Development Fees." This amendment was enacted as "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" which requires compliance with designated calculation methodology. Article 8 requires an update to the System Development Fee (SDF) analysis to be performed at least every 5 years.

The SDF analysis is based on the calculated cost per unit volume of utility assets that provide available capacity to supply new development, both now and in the future. Fees are required to be calculated based on the consumption need per Service Unit, which is defined as the level of demand associated with the typical residential customer. A three-bedroom single family residence fits this definition and is referred to as an Equivalent Residential Unit (ERU). The associated level of demand for this customer type can therefore be assigned 400 gallons per day (gpd) for water and 225 gpd for sewer based on standard design flow rates for water and wastewater specified in NC Administrative Code 15A NCAC 18C .0409 and 15A NCAC 02T.0114, as amended, respectively.

Table 0.0.1 – System Development Fee Calculation: Cost per Gallon per Day ($/GPD)

Bessemer City: Cost per Unit Volume and Cost per Service Unit		
Item	Cost-Justified System Development Fee Calculation	Cost of Capacity $ / GPD
1	Water System	$ 4.39
2	Sewer System	$ 6.24

The fee for other types of development for Bessemer City can be determined by applying the calculated cost of capacity per gallon of demand per day for various uses as defined by NC Administrative Code 15A NCAC 02T.0114 using the cost of capacity values shown above in Table 0.0.1 for the City's water and sewer systems.

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Purpose Statement:

This report documents the results of the approach, methods and calculations for establishing system development fees. In accordance with North Carolina General Statue 162A, Article 8, system development fees must be determined by a qualified engineer or financial professional using industry standard practices. McGill Associates, PA (McGill) is qualified in engineering disciplines and financial analysis, with experience and expertise in determining system development fees. For more than 40 years, the firm has provided professional services and guidance to hundreds of local government units, water authorities and special districts in developing and implementing utility master plans, capital improvement programs, user rates, charges and other fees, including capacity charges. The approach, methodology and calculations are based on American Water Works Association (AWWA) Manual of Water Supply Practices – M1, Principles of Water Rates, Fees, and Charges, Seventh Edition.

Bessemer City has made significant investments in the City's water and sewer system assets that will continue to provide available capacity for new connections and future development. Bessemer City desires to use System Development Fees to recover a reasonable portion of the costs associated with providing capacity.

The result of this effort will establish the maximum cost-justified System Development Fee using common industry practices and industry standards. McGill has relied on information and assumptions provided by Bessemer City, as the City is the most reliable and knowledgeable source of information regarding the water and sewer systems, the Utility's finances, funding sources, etc. McGill has not independently verified the accuracy of information provided by the City and has deemed the information to be reasonable for the purposes of this analysis and appropriate for supporting the conclusions reached. Bessemer City may elect to implement fees of lesser value; however, any adjustment must be calculated on a cost per unit volume basis.

This report does not constitute a recommendation of an SDF amount. Bessemer City has full authority to charge any fee up to the maximum amount calculated herein, provided it is applied proportionally to the relative demands of new development. Evaluation of local factors, preferences, etc., may influence Bessemer City's decision. The final SDF fee amount is required to be determined by the City and adopted in accordance with applicable State and local regulations and policies prior to implementation.

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1.0 APPROACH

System Development Fees are defined as a charge imposed on each new customer or development that generally offsets the incremental cost of replacing existing and/or constructing new capital assets to provide capacity that will continue to meet the demands placed on the system by each new customer or development. Since system capacity must, without exception, exceed customer demands, the major infrastructure components providing this capacity must be planned and constructed well in advance and in large enough increments to keep pace with the anticipated demands of new development on the available system capacity.

By definition, SDFs are based on the costs for capacity-related infrastructure that provide a general benefit to all customers, typically referred to as major backbone infrastructure components. Eligible asset types include source-of-supply, water treatment, pumping, storage transmission and major sewer collection mains, sewer treatment, solids processing and disposal. McGill engineers identified assets that function as backbone components using asset registries, water and sewer maps, GIS attributes and other records provided by the City. City Staff then reviewed the information and filled in data gaps to complete a list of assets eligible for inclusion in the SDF calculation.

AWWA methodology cites a Rational Nexus, or reasonable relationship, must be established between the fee charged and the cost associated with providing capacity to new customers. The Rational Nexus Test consists of three elements: 1) a review of historical development patterns and available planning documents to verify general alignment between capacity demands driven by development and capital improvements that are, and will be needed to provide the required capacity; 2) a determination of the proportionate share of costs to be borne by new development through appropriate methodology and calculation and 3) establishing a reasonable allocation of costs associated with new development in relation to the service benefits received by the new development through appropriate methodology and calculations.

The first element of the Rational Nexus Test was determined to be favorable for the City's water and sewer systems based on the capacities of water supply, production, storage and transmission, sewer collection, treatment and disposal, which were compared to historical and projected system demands. Water and sewer system characteristics were reviewed using the annual water demand and sewer treatment data reported by Bessemer City to the NC Department of Environmental Quality Division of Water Resources for Local Water Supply Planning (LWSP) that verified Bessemer City's water and sewer systems have adequate capacity to support new development presently and into the future.

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Water system demand in 2025 was reported to be 1.084 million gallons per day (MGD). System capacity is 3.0 MGD as defined by the water treatment plant permit; however, the City reports Available Capacity in its Local Water Supply Plan (LWSP) as 2.776 MGD. Using this value, capacity available for new development is 1.692 MGD, or approximately 61% of the water system's capacity. Sewer system Daily Average Flow (DAF) in 2025 was reported to be 0.606 MGD. Compared to the maximum capacity of the system as defined by the Sewer Service Utility Agreement with the City of Gastonia of 1.608 MGD, capacity available for new development is 1.002 MGD, or approximately 62% of the sewer system's capacity.

Future water system demand reported by the City in its LWSP through 2040 is 1.118 MGD. Applying the same annual rates of increase to sewer system DAF, demand on sewer system capacity is anticipated to reach 0.625 MGD by 2040, demonstrating that adequate water and sewer capacity is available for new development through the SDF Study's 10-year planning period.

Table 1.01 summarizes current and projected capacities, along with water supply availability and wastewater treatment/disposal.

Table 1.0.1 – Bessemer City Water and Sewer Capacities: Availability Projection

Bessemer City: Treatment Capacity Availability Projection (MGD)				
Item	Existing Water and Sewer System Infrastructure	2025	2030	2040
WC1	Water Capacity	2.776	2.776	2.776
WC2	Water Average Day Demand	1.084	1.110	1.118
	Available Water Capacity	1.692	1.666	1.658
SC1	Sewer Capacity	1.608	1.608	1.608
SC2	Sewer Average Day Flow	0.606	0.620	0.625
	Available Sewer Capacity	1.002	0.988	0.983

Source: Bessemer City 2025 NC Division of Water Resources, Local Water Supply Planing data

Therefore, existing water supply and wastewater treatment capacities appear to be adequate to meet projected demands without the need to purchase additional water supply or construct wastewater treatment capacity during the 10-year planning period.

The remaining elements of the Rational Nexus Test are demonstrated through appropriate methodology and calculations in the following sections.

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2.0 METHODOLOGY

Three methods for calculating system development charges are recognized in the industry as cost justified (AWWA, M1 Manual, 7th Edition, Chapter VII.2). Each of these methods meet the requirement of the Rational Nexus standard, and as set forth in North Carolina General Statute 162A Article 8 "System Development Fees". An explanation of each method and its general application to calculating system development fees are presented as follows:

Buy-In Method

The Buy-In Method is used where existing system capacity is available to provide service to new development. This includes capacity-related assets that are classified as construction work in progress. New customers essentially "buy" their proportionate share of system capacity from the current customer base ("system owners") at the current cost or value of the existing facilities. HB 436 requires appropriate adjustments to replacement cost such as "debt credits, grants, and other generally accepted valuation adjustments."

Incremental Cost Method

The Incremental Cost Method is used to assign incremental costs of the capital assets required for providing additional system capacity to new development. Generally, this method is considered most appropriate when the existing system does not have sufficient available capacity, and a significant portion of the capacity required to serve new customers must be provided by the construction of new facilities. This method should include supporting details that identify construction costs, scheduling, financing, funding source(s), and other related items that correspond to a capital improvements plan (CIP), utilities master plan, and/or other approved planning document(s) that cover a planning horizon of 10 to 20 years.

Combined Method

The Combined Method is a combination of the Buy-In and Incremental Cost Methods. It is used when existing assets provide a portion of system capacity to accommodate new development and applicable capital planning identifies significant investments that will be needed to add necessary infrastructure that addresses future growth and capacity needs.

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3.0 CALCULATION of SYSTEM DEVELOPMENT FEES

The **Combined Method** is the appropriate approach to calculate Bessemer City's system development fees. Water and sewer system capacities are sufficient and available to provide service to new customers in the short term; however, capacity-related capital improvements are included in the 10-year water and sewer Capital Improvements Plan to deliver available capacity to anticipated new development.

3.1 Existing System Capacity Availability

Case law following HB 436 legislation establishes that available system capacity must be provided contemporaneously with the acceptance and collection of system development fees. Therefore, availability of adequate system capacity must be demonstrated and maintained.

The current available capacities for the water and sewer systems are as follows:

Table 3.1.1– Bessemer City Available Capacities

Bessemer City: Water and Sewer System Available Treatment Capacities				
Item	System Capacity - Million Gallons Per Day (MGD)	System Capacity	System Demand	Available Capacity
1	Water System	2.78	1.084	1.692
2	Sewer System	1.61	0.606	1.002

Source: Records provided by Bessemer City.

Bessemer City's water system has 61% of its capacity available to provide service to new development, and the sewer system has 62% of its capacity available to provide service to new development.

3.2 System Development Fee Calculation – Combined Method

After demonstrating that capacity is available, the value of existing assets that provide available capacity is calculated on a cost per gallon basis. The value of planned capital improvements needed to support new development anticipated during the planning period is calculated on a cost per gallon basis. The sum of these calculated costs can then be applied to the volume anticipated by each new connection or development. This approach generally represents reimbursement to existing customers for constructing and maintaining available capacity in advance of new development, and represents the cost of constructing future capacity that is needed to support future development.

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3.2.1 Buy In Valuation

Assets included in the buy-in valuation are existing system components that generally provide benefit to the entire customer base. These components serve as the backbone of the system and are responsible for delivering available capacity to both existing and potential customers. Water and sewer assets functioning as system backbone components were identified by McGill's engineering staff under the direction of licensed professional engineers experienced in water and sewer utility system design and performance to be included in the SDF calculation.

City staff identified backbone components contributed by or paid for by others through (developer) donated assets, contributed capital, grants, loan principal forgiveness, etc. These assets are ineligible since the cost of these assets were not "paid for" by the utility's existing customers. Present value of assets partially funded by others were adjusted by the present value of grants, principal forgiveness and other contributions that offset original project costs to the City. Also, non-capacity related assets such as vehicles, computers, software, etc., were excluded from the calculation.

The preferred AWWA method to determine asset value is taking the original value of an asset and adjusting the cost to meet current-day prices less depreciation, this is known as Replacement Cost New Less Depreciation (RCNLD). This method is based on the premise that SDFs reflect the value of providing a given amount of new capacity at the cost of constructing those assets responsible for providing capacity at the time new customers are connected. This reasonably compensates existing customers for carrying the costs of constructing capital assets in advance to provide the necessary capacity for new development.

RCNLD is determined by using several types of records and resources including the utility's current fixed asset records, GIS data, construction records, previous studies and analyses, operations staff, engineers and financial analysts. Records and asset-related databases that provide adequate details on original cost, date of acquisition and depreciation rate of eligible assets can be used to determine replacement cost new (RCN) using an accepted construction cost index such as the Handy-Whitman Index of Construction Costs for the South Atlantic Region. Depreciation can then be deducted based on each asset type to reach RCNLD.

For eligible assets lacking sufficient inventory record details of cost and date of acquisition, McGill determined replacement cost new (RCN) based on the best judgement of qualified and experienced professional engineers using historical information, specific project conditions and other cost factors associated with the local construction market. Applicable rates of depreciation are then applied to reach RCNLD.

Assets included in the incremental cost method are assigned value based on the CIP. future value of construction, including related planning, engineering, financing and legal costs which are generally included

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The value of available system capacity can then be calculated by dividing the combined value of RCNLD and incremental of assets that provide capacity for new development (eligible assets) by the system capacity.

Table 3.2.1– Water System Cost per GPD of Existing Assets Providing Available Capacity

Bessemer City: Water System Development Fee Buy-In Valuation		
Item	System Asset Description	Amount
	Water System Assets - SDF Eligible	
W1	Water Source and Treatment	$ 12,866,890
W2	Water Transmission Infrastructure	$ 6,390,625
	Subtotal - Water System Assets	$ 19,257,515
	Less Grants and Donated Assets	$ (6,216,557)
	Less Outstanding Debt Principal	$ (6,422,113)
	Equals: Net Water System Value	$ 6,618,845
	Divide by: Water System Capacity (MGD)	2.78
	Equals: Unit Valuation of Water System ($/MGD)	$ 2,383,967
	Divide by: 1,000,000 gallons ($/GPD)	$ 2.38

Table 3.2.2– Sewer System Cost per GPD of Existing Utility Assets Providing Available Capacity

Bessemer City: Sewer System Development Fee Buy-In Valuation		
Item	System Asset Description	Amount
	Sewer System Assets - SDF Eligible	
S1	Sewer Pumping	$ 1,451,970
S2	Sewer Conveyance Infrastructure	$ 7,444,190
	Subtotal - Sewer System Assets	$ 8,896,161
	Less Grants and Donated Assets	$ (562,044)
	Less Outstanding Debt Principal	$ (2,664,020)
	Equals: Net Sewer System Value	$ 5,670,097
	Divide by: Sewer System Capacity (MGD)	1.608
	Equals: Unit Valuation of Sewer System ($/MGD)	$ 3,526,180
	Divide by: 1,000,000 gallons ($/GPD)	$ 3.53

3.2.2 Incremental Valuation

Capital projects identified in the 10-year CIP will provide access to treated water and sewer service for new customers but will not add any additional water treatment plant capacity or require the purchase of additional sewer treatment capacity. Because the Incremental

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Approach is based on total treatment capacity of the City's system, the total capacity used for the Incremental Approach remains at 2.776 MGD for the water system and 1.608 MGD for the sewer system.

Table 3.2.3 - Water System Cost per GPD of Future Assets Providing Available Capacity

Bessemer City System Capacity-Related Component Incremental Valuation			
CIP Item	System Asset Description		SDF Asset Valuation
	Water System Assets		
WI-1	Holland Memorial Church Rd Water Line Extension	$	792,000
WI-2	Southeast Water Tank	$	7,546,000
	Subtotal - Water System Assets	$	8,338,000
Valuation Adjustments and Calculation of Cost-Justified Fee			
	Less Funding by Outside Source(s):	$	-
	Less Revenue Credit	$	(2,241,500)
	Equals: Adjusted Net Asset Valuation	$	6,096,500
	Divided by: System Capacity (MGD)		2.80
	Equals: Valuation per Unit Volume ($/MGD)	$	2,177,321
	Divided by: 1,000,000 gallons = $/GPD	$	2.18

Table 3.2.4 - Sewer System Cost per GPD of Future Assets Providing Available Capacity

Bessemer City System Capacity-Related Component Incremental Valuation			
CIP Item	System Asset Description		SDF Asset Valuation
	Sewer System Assets		
SI-1	9th Street Lift Station Upgrades	$	46,000
SI-2	Southeast Lift Station Gravity Sewer Extension	$	5,760,000
	Subtotal - Water System Assets	$	5,806,000
	Less Funding by Outside Source(s):	$	-
	Less Revenue Credit	$	(1,451,500)
	Equals: Adjusted Net Asset Valuation	$	4,354,500
	Divided by: System Capacity (MGD)		1.61
	Equals: Valuation per Unit Volume ($/MGD)	$	2,708,022
	Divided by: 1,000,000 gallons = $/GPD	$	2.71

3.3 Valuation Adjustments

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The above system valuations include applicable credit adjustments for revenues anticipated from user charges, donated infrastructure, grants, funding from other (non-rate payer) sources and outstanding principal on existing any debt obligation(s).

HB 436 requires revenue credits to be applied to the SDF calculation to deduct assets contributed by or paid for (in part or in whole) by others. This includes but is not limited to grants, loan principal forgiveness and capital assets contributed by developers. These investments are deducted from the calculation since these costs were not "paid" by the existing customers.

Outstanding debt principal is also excluded from the SDF calculation because if it were included, new customers would bear this obligation twice. Once as part of the system development fee, and again as part of customer rates and user charges that apply to debt maturity.

3.4 Cost per Unit Volume

Dollar value that can be applied uniformly to all potential customers.

Following determination of the net water system value, system capacity is divided into the net system value to produce the cost per unit volume, expressed as dollars-per-gallons-per-day ($/GPD).

This measure becomes the starting point by establishing the cost of capacity for each gallon of usage. Using the NC Administrative Code 15A NCAC 1815A NCAC 02T .0114 Water Design Flow Rate, the cost can be calculated for 3-bedroom dwelling unit, which is the unit of measure required by HB436, typically referred to as an equivalent residential unit (ERU).

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4.0 SERVICE UNIT CALCULATIONS: EQUIVALENT RESIDENTIAL UNITS

HB 436 requires SDF calculations to be applied to various categories of customer demands based on service units or ERU's. An ERU is defined as the water and sewer capacities required to serve the most typical user type which is a three-bedroom single-family dwelling. North Carolina Division of Water Resources (DWR) design standards for constructing water and sewer systems, NC Administrative Code 15A NCAC 18C .0409 and 15A NCAC 02T .0114 respectively, assign 400 gallons per day for water demand and 225 gallons per day for wastewater.

Table 4.0.1– System Development Fees: Equivalent Residential Unit, Water and Sewer

Bessemer City Equivalent Residential Unit Calculation				
Item	System Development Fee Calculation	Cost of Capacity $/GPD	Customer Demand GPD	Cost per Unit Capacity
1	Water System	$ 4.56	400	$ 1,823
2	Sewer System	$ 6.24	225	$ 1,404
	Total ERU			$ 3,226

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5.0 APPLICATION of SYSTEM DEVELOPMENT FEES and SERVICE UNIT EQUIVALENCY

North Carolina General Statutes Chapter 162A-205 requires the development of an equivalency or conversion table to determine fees applicable to various categories of demand. North Carolina Administrative Codes 15A NCAC 18C .0409 and 15A NCAC 02T .0114, included in the Appendix, in addition to establishing system demands for engineering and planning purposes, further defines other service connection types and the associated water demands and sewer system flows on a per gallon per day basis. Therefore, these tables serve as an equivalency or conversion for use in determining applicable SDFs for various categories of demand and types of establishments.

Using NC Administrative Code Codes 15A NCAC 18C .0409 and 15A NCAC 02T .0114 further supports the requirement to maintain a rational nexus between the cost of capacity and the system development fee charged to new development since the same standard used to plan, design and construct capacity is the same basis for determining the system development fee amount.

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Appendix

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GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2017

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.

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

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GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2021

SESSION LAW 2021-76
HOUSE BILL 344

AN ACT TO CLARIFY THE PROCESS WITH WHICH A LOCAL GOVERNMENTAL UNIT MAY IMPOSE AND COLLECT SYSTEM DEVELOPMENT FEES AND TO PROVIDE THAT A WATER OR WASTEWATER PUBLIC UTILITY IS SOLELY RESPONSIBLE FOR INCOME TAXES DUE ON TAXABLE CONTRIBUTIONS IN AID OF CONSTRUCTION.

The General Assembly of North Carolina enacts:

SECTION 1. G.S. 162A-201 reads as rewritten:

"**§ 162A-201. Definitions.**

The following definitions apply in this Article:

…

(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,~~ facility providing a general benefit to the area that facility serves and is owned or operated, or to be owned or operated, by a local governmental ~~unit and land associated with such facility.~~unit. This shall include facilities for the reuse or reclamation of water and any land associated with the facility.

…

(7) Service. – Water or sewer service, or water and sewer service, provided by a local governmental ~~unit.~~unit, including water or sewer service provided pursuant to a wholesale arrangement between a water and sewer authority organized under Article 1 of Chapter 162A of the General Statutes and a local governmental unit.

…

(9) System development fee. – A charge or assessment for ~~service~~ service, including service provided pursuant to a wholesale arrangement between a water and sewer authority organized under Article 1 of Chapter 162A of the General Statutes and a local governmental unit, 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.

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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).

…."

SECTION 2. G.S. 162A-205 reads as rewritten:

"**§ 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 five 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.

(9) Uses the gallons per day per service unit that the local governmental unit applies to its water or sewer system engineering or planning purposes for water or sewer, as appropriate, in calculating the system development fee."

SECTION 3. G.S. 162A-207 reads as rewritten:

"**§ 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."

SECTION 4. Article 7 of Chapter 62 of the General Statutes is amended by adding a new section to read:

"**§ 62-133.12B. Computation of income tax expense for rate-making purposes; taxable contributions.**

A water or wastewater public utility is solely responsible for funding the income taxes on taxable contributions in aid of construction and customer advances for construction and shall record the income taxes the water or wastewater utility pays in accumulated deferred income taxes for accounting and rate-making purposes."

SECTION 5. This act is effective when it becomes law and clarifies existing law with minimum standards employed by all generally accepted accounting, engineering, and planning methodologies used to calculate system development fees for public water and sewer systems.

In the General Assembly read three times and ratified this the 24th day of June, 2021.

s/ Mark Robinson
President of the Senate

s/ Tim Moore
Speaker of the House of Representatives

s/ Roy Cooper
Governor

Approved 12:03 p.m. this 2nd day of July, 2021

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GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2019

SESSION LAW 2020-61
HOUSE BILL 873

AN ACT TO CLARIFY THE TIMING OF COLLECTION OF SYSTEM DEVELOPMENT FEES AND TO REQUIRE THE DEPARTMENT OF ENVIRONMENTAL QUALITY TO AMEND A RULE THAT CURRENTLY ALLOWS A SEWER THAT SERVES A SINGLE BUILDING TO BE DEEMED PERMITTED, TO ALLOW A SEWER SHARED WITH AN ACCESSORY BUILDING ON THE SAME PROPERTY TO BE DEEMED PERMITTED AS WELL.

The General Assembly of North Carolina enacts:

SECTION 1.(a) G.S. 162A-213(a)a. is recodified as G.S. 162A-213(a)(1).
SECTION 1.(b) G.S. 162A-213(a)b. is recodified as G.S. 162A-213(a)(2).
SECTION 1.(c) G.S. 162A-213(b)a. is recodified as G.S. 162A-213(b)(1).
SECTION 1.(d) G.S. 162A-213(b)b. is recodified as G.S. 162A-213(b)(2).

SECTION 2.(a) G.S. 162A-213, as amended by Section 1 of this act, reads as rewritten:

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

(a) Land Subdivision. – For new development involving the subdivision of land, the system development fee shall be collected by a local governmental unit at the later of either of the following:

(1) The time of ~~plat recordation.~~application for a building permit.

(2) When water or sewer service is committed by the local governmental unit.

(b) Other New Development. – For all other new development, the local governmental unit shall collect the system development fee at the earlier of either of the following:

(1) The time of application for connection of the individual unit of development to the service or facilities.

(2) When water or sewer service is committed by the local governmental unit.

(c) If the system development fee is collected under subdivision (a)(1) of this section and the local governmental unit that charges or assesses the system development fee is different from the local governmental unit that issues the building permit, the local governmental unit issuing the building permit shall require proof of collection of the system development fee prior to issuance of the building permit.

(d) No system development fee shall be charged or assessed with respect to any new development for which a system development fee under this Article has been collected at the time of plat recordation involving the subdivision of land and the amount of capacity associated with that payment of the system development fee has not increased at the time of application for the building permit. If the amount of capacity is increased at the time of application for a building permit, then a system development fee may be charged for the difference in the amount of the increased capacity minus the system development fee previously paid under this Article."

SECTION 2.(b) This section becomes effective January 1, 2021, and applies to system development fees collected on or after that date.

SECTION 3.(a) G.S. 162A-211 is amended by adding a new subsection to read:

"(a1) Revenue from system development fees calculated using the combined cost method may be expended for previously completed capital improvements for which capacity exists and for capital rehabilitation projects."

SECTION 3.(b) This section becomes effective July 1, 2020, and applies to system development fees expended or encumbered on or after that date.

SECTION 4.(a) Definitions. – For purposes of this section and its implementation, the following definitions apply:

(1) "Permitting by Regulation for Building Sewer Systems Rule " means 15A NCAC 02T .0303 (Permitting by Regulation).

(2) "Accessory building" means in one- and two-family dwellings not more than three stories above grade plane in height with a separate means of egress, a building, the use of which is incidental to that of the main building and which is detached and located on the same lot. An accessory building is a building that is roofed over and more than fifty percent (50%) of its exterior walls are enclosed. Examples of accessory buildings are garages, storage buildings, workshops, boat houses, treehouses, and dwelling units, etc. For purposes of this section, "main building" shall only include one- and two-family dwellings.

(3) "Building sewer" means that part of the drainage system that extends from the end of the building drain and conveys the discharge by gravity or under pressure to a public sewer, private sewer, individual sewage disposal system, or other point of disposal.

(4) "Lot" means a portion or parcel of land considered as a unit.

SECTION 4.(b) Permitting by Regulation for Building Sewer Systems Rule. – Until the effective date of the revised permanent rule that the Environmental Management Commission is required to adopt pursuant to subsection (d) of this section, the Commission shall implement the Permitting by Regulation for Building Sewer Systems Rule as provided in subsection (c) of this section.

SECTION 4.(c) Implementation. – Notwithstanding the requirements of General Permit No. WQG100000 and the limitation on applicability of 15A NCAC 02T .0303(a)(1), (a)(2), and (a)(3) to a building sewer that serves a single building, if a building sewer that serves a main building is deemed permitted pursuant to 15A NCAC 02T .0113, then a building sewer that serves an accessory building on the same lot that is connected to the building sewer for the main building, and a sewer shared between a main building and an accessory building, shall also be deemed permitted if the building sewer that serves the accessory building, and the sewer shared between the main building and the accessory building, meet the criteria in 15A NCAC 02T .0113 and all criteria required for that system in 15A NCAC 02T .0303, and no additional permit shall be required. This section shall only apply to sewers that serve one main building and one accessory building on the same lot.

SECTION 4.(d) Additional Rule-Making Authority. – The Commission shall adopt a rule to amend the Permitting by Regulation for Building Sewer Systems Rule consistent with subsection (c) of this section. Notwithstanding G.S. 150B-19(4), the rule adopted by the Commission pursuant to this section shall be substantively identical to the provisions of subsection (c) of this section. Rules adopted pursuant to this section are not subject to Part 3 of Article 2A of Chapter 150B of the General Statutes. Rules adopted pursuant to this section shall become effective as provided in G.S. 150B-21.3(b1), as though 10 or more written objections had been received as provided in G.S. 150B-21.3(b2).

SECTION 4.(e) Applicability and Sunset. – This section and rules adopted pursuant to this section shall apply to common sewer lines in existence on, or constructed on or after, the effective date of this act, which are shared by accessory dwelling units or accessory residential

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buildings and a primary residence. This section expires when permanent rules adopted as required by subsection (d) of this section become effective.

SECTION 5. Except as otherwise provided, this act is effective when it becomes law.

In the General Assembly read three times and ratified this the 24th day of June, 2020.

s/ Philip E. Berger
President Pro Tempore of the Senate

s/ Tim Moore
Speaker of the House of Representatives

s/ Roy Cooper
Governor

Approved 12:23 p.m. this 30th day of June, 2020

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15A NCAC 02T .0114 WASTEWATER DESIGN FLOW RATES

(a) This Rule shall be used to determine wastewater flow rates for all systems covered by this Subchapter unless alternate criteria are provided by a program specific rule and for flow used for the purposes of 15A NCAC 02H .0105. These are minimum design daily flow rates for normal use and occupancy situations. Higher flow rates may be required where usage and occupancy are atypical, including, those in Paragraph (e) of this Rule. Wastewater flow calculations must take hours of operation and anticipated maximum occupancies/usage into account when calculating peak flows for design.

(b) In determining the volume of sewage from dwelling units, the flow rate shall be 120 gallons per day per bedroom. The minimum volume of sewage from each dwelling unit shall be 240 gallons per day and each additional bedroom above two bedrooms shall increase the volume by 120 gallons per day. Each bedroom or any other room or addition that can reasonably be expected to function as a bedroom shall be considered a bedroom for design purposes. When the occupancy of a dwelling unit exceeds two persons per bedroom, the volume of sewage shall be determined by the maximum occupancy at a rate of 60 gallons per person per day.

(c) The following table shall be used to determine the minimum allowable design daily flow of wastewater facilities. Design flow rates for establishments not identified below shall be determined using available flow data, water-using fixtures, occupancy or operation patterns, and other measured data.

Type of Establishments	Daily Flow For Design
Barber and beauty shops	
Barber Shops	50 gal/chair
Beauty Shops	125 gal/booth or bowl
Businesses, offices and factories	
General business and office facilities	25 gal/employee/shift
Factories, excluding industrial waste	25 gal/employee/shift
Factories or businesses with showers or food preparation	35 gal/employee/shift
Warehouse	100 gal/loading bay
Warehouse – self storage (not including caretaker residence)	1 gal/unit
Churches	
Churches without kitchens, day care or camps	3 gal/seat
Churches with kitchen	5 gal/seat
Churches providing day care or camps	25 gal/person (child & employee)
Fire, rescue and emergency response facilities	
Fire or rescue stations without on site staff	25 gal/person
Fire or rescue stations with on-site staff	50 gal/person/shift
Food and drink facilities	
Banquet, dining hall	30 gal/seat
Bars, cocktail lounges	20 gal/seat
Caterers	50 gal/100 sq ft floor space
Restaurant, full Service	40 gal/seat
Restaurant, single service articles	20 gal/seat
Restaurant, drive-in	50 gal/car space
Restaurant, carry out only	50 gal/100 sq ft floor space
Institutions, dining halls	5 gal/meal
Deli	40 gal/100 sq ft floor space
Bakery	10 gal/100 sq ft floor space
Meat department, butcher shop or fish market	75 gal/100 sq ft floor space
Specialty food stand or kiosk	50 gal/100 sq ft floor space
Hotels and Motels	
Hotels, motels and bed & breakfast facilities, without in-room cooking facilities	120 gal/room
Hotels and motels, with in-room cooking facilities	175 gal/room
Resort hotels	200 gal/room
Cottages, cabins	200 gal/unit
Self service laundry facilities	500 gal/machine
Medical, dental, veterinary facilities	
Medical or dental offices	250 gal/practitioner/shift

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Veterinary offices (not including boarding)	250 gal/practitioner/shift
Veterinary hospitals, kennels, animal boarding facilities	20 gal/pen, cage, kennel or stall
Hospitals, medical	300 gal/bed
Hospitals, mental	150 gal/bed
Convalescent, nursing, rest homes without laundry facilities	60 gal/bed
Convalescent, nursing, rest homes with laundry facilities	120 gal/bed
Residential care facilities	60 gal/person
Parks, recreation, camp grounds, R-V parks and other outdoor activity facilities	
Campgrounds with comfort station, without water or sewer hookups	75 gal/campsite
Campgrounds with water and sewer hookups	100 gal/campsite
Campground dump station facility	50 gal/space
Construction, hunting or work camps with flush toilets	60 gal/person
Construction, hunting or work camps with chemical or portable toilets	40 gal/person
Parks with restroom facilities	250 gal/plumbing fixture
Summer camps without food preparation or laundry facilities	30 gal/person
Summer camps with food preparation and laundry facilities	60 gal/person
Swimming pools, bathhouses and spas	10 gal/person
Public access restrooms	325 gal/plumbing fixture
Schools, preschools and day care	
Day care and preschool facilities	25 gal/person (child & employee)
Schools with cafeteria, gym and showers	15 gal/student
Schools with cafeteria	12 gal/student
Schools without cafeteria, gym or showers	10 gal/student
Boarding schools	60 gal/person (student & employee)
Service stations, car wash facilities	
Service stations, gas stations	250 gal/plumbing fixture
Car wash facilities (if recycling water see Rule .0235)	1200 gal/bay
Sports centers	
Bowling center	50 gal/lane
Fitness, exercise, karate or dance center	50 gal/100 sq ft
Tennis, racquet ball	50 gal/court
Gymnasium	50 gal/100 sq ft
Golf course with only minimal food service	250 gal/plumbing fixture
Country clubs	60 gal/member or patron
Mini golf, putt-putt	250 gal/plumbing fixture
Go-kart, motocross	250 gal/plumbing fixture
Batting cages, driving ranges	250 gal/plumbing fixture
Marinas without bathhouse	10 gal/slip
Marinas with bathhouse	30 gal/slip
Video game arcades, pool halls	250 gal/plumbing fixture
Stadiums, auditoriums, theaters, community centers	5 gal/seat
Stores, shopping centers, malls and flea markets	
Auto, boat, recreational vehicle dealerships/showrooms with restrooms	125 gal/plumbing fixture
Convenience stores, with food preparation	60 gal/100 sq ft
Convenience stores, without food preparation	250 gal/plumbing fixture
Flea markets	30 gal/stall
Shopping centers and malls with food service	130 gal/1000 sq ft
Stores and shopping centers without food service	100 gal/1000 sq ft
Transportation terminals – air, bus, train, ferry, port and dock	5 gal/passenger

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(d) Design daily flow rates for proposed non-residential developments where the types of use and occupancy are not known shall be designed for a minimum of 880 gallons per acre or the applicant shall specify an anticipated flow based upon anticipated or potential uses.

(e) Conditions applicable to the use of the above design daily flow rates:

(1) For restaurants, convenience stores, service stations and public access restroom facilities, higher design daily flow rates shall be required based on higher expected usage where use is increased because of its proximity to highways, malls, beaches, or other similar high use areas.

(2) Residential property on barrier islands and similar communities located south or east of the Atlantic Intracoastal Waterway used as vacation rental as defined in G.S. 42A-4 shall use 120 gallons per day per habitable room. Habitable room shall mean a room or enclosed floor space used or intended to be used for living or sleeping, excluding kitchens and dining areas, bathrooms, shower rooms, water closet compartments, laundries, pantries, foyers, connecting corridors, closets, and storage spaces.

(f) An adjusted daily sewage flow design rate shall be granted for permitted but not yet tributary connections and future connections tributary to the system upon showing that a sewage system is adequate to meet actual daily wastewater flows from a facility included in Paragraph (b) or (c) of this Rule without causing flow violations at the receiving wastewater treatment plant or capacity related sanitary sewer overflows within the collection system as follows:

(1) Documented, representative data from that facility or a comparable facility shall be submitted by an authorized signing official in accordance with Rule .0106 of this Section to the Division as follows for all flow reduction request:

(A) Dates of flow meter calibrations during the time frame evaluated and indication if any adjustments were necessary.

(B) A breakdown of the type of connections (e.g. two bedroom units, three bedroom units) and number of customers for each month of submitted data as applicable. Identification of any non-residential connections including subdivision clubhouses/pools, restaurants, schools, churches and businesses. For each non-residential connection, information as identified in Paragraph (c) of this Rule (e.g. 200 seat church, 40 seat restaurant, 35 person pool bathhouse).

(C) Owner of the collection system.

(D) Age of the collection system.

(E) Analysis of inflow and infiltration within the collection system or receiving treatment plant, as applicable.

(F) Where a dedicated wastewater treatment plant serves the specific area and is representative of the residential wastewater usage, at least the 12 most recent consecutive monthly average wastewater flow readings and the daily total wastewater flow readings for the highest average wastewater flow month per customers as reported to the Division.

(G) Where daily data from a wastewater treatment plant cannot be utilized or is not representative of the project area: at least 12 months worth of monthly average wastewater flows from the receiving treatment plant shall be evaluated to determine the peak sewage month. Daily wastewater flows shall then be taken from a flow meter installed at the most downstream point of the collection area for the peak month selected that is representative of the project area. Justification for the selected placement of the flow meter shall also be provided.

(H) An estimated minimum design daily sewage flow rate shall be taken by calculating the numerical average of the top three daily readings for the highest average flow month. The calculations shall also account for seasonal variations, excessive inflow and infiltration, age and suspected meter reading/recording errors.

(2) The Division shall evaluate all data submitted but shall also consider other factors in granting, with or without adjustment, or denying a flow reduction request including: applicable weather conditions during the data period (i.e. rainy or drought), other historical monitoring data for the particular facility or other similar facilities available to the Division, the general accuracy of monitoring reports and flow meter readings, and facility usage (i.e., resort area).

(3) Flow increases shall be required if the calculations in Subparagraph (f)(1) of this Rule yield design flows higher than that specified in Paragraphs (b) or (c) of this Rule.

(4) The applicant/owner shall retain the letter of any approved adjusted daily design flow rate for the life of the facility and shall transfer such letter to any new system owner.

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History Note: *Authority G.S. 143-215.1; 143-215.3(a)(1);*
Eff. September 1, 2006.

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HOUSE BILL 600
RATIFIED BILL

AN ACT TO PROVIDE FURTHER REGULATORY RELIEF TO THE CITIZENS OF NORTH CAROLINA.

The General Assembly of North Carolina enacts:

PART I. AGRICULTURE, ENERGY, ENVIRONMENT, AND NATURAL RESOURCES PROVISIONS

…."

WASTEWATER DESIGN FLOW RATE MODIFICATIONS

SECTION 18. G.S. 143-215.1(f3) reads as rewritten:

"(f3) The permittee for a wastewater ~~treatment system may~~ system:

(1) May calculate its wastewater flows for new dwelling ~~units, including~~ units discharging to wastewater systems serving two or more dwelling units that have yet to be connected and for which the permittee has allocated capacity, at 75 gallons per day per bedroom, or at a lower rate approved by the Department. If wastewater flows are calculated pursuant to this subdivision, the minimum volume of sewage from each dwelling unit is 75 gallons per day and each additional bedroom above one bedroom increases the volume by 75 gallons per day.

(2) Shall calculate its wastewater flows for new dwelling units discharging to wastewater systems serving two or more dwelling units that have yet to be connected and for which the permittee has not allocated capacity at 75 gallons per day per bedroom, or at a lower rate approved by the Department. For wastewater flows calculated pursuant to this subdivision, the minimum volume of sewage from each dwelling unit is 75 gallons per day and each additional bedroom above one bedroom increases the volume by 75 gallons per day."

SECTION 18.1.(a) Definitions. – For purposes of this section and its implementation:

(1) "Dwelling Wastewater Design Flow Rate Rule" means 15A NCAC 02T .0114 (Wastewater Design Flow Rates) as it applies to dwelling units.

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(2) "Demonstration of Future Wastewater Treatment Capacities Rule" means 15A NCAC 02T .0118 (Demonstration of Future Wastewater Treatment Capacities).

SECTION 18.1.(b) Dwelling Wastewater Design Flow Rate Rule and Demonstration of Future Wastewater Treatment Capacities Rule. – Until the effective date of the revised permanent rules that the Environmental Management Commission is required to adopt pursuant to subsection (d) of this section, the Commission shall implement the Dwelling Wastewater Design Flow Rate Rule and the Demonstration of Future Wastewater Treatment Capacities Rule as provided in subsection (c) of this section.

SECTION 18.1.(c) Implementation. – The Environmental Management Commission shall amend:

(1) The Wastewater Design Flow Rate Rule as it applies to the determination of the volume of sewage from dwelling units under subsection (b) of that rule to be consistent with flow rates established pursuant to G.S. 143-215.1(f3), as amended by Section 18 of this act.

(2) The Demonstration of Future Wastewater Treatment Capacities Rule as it applies to be consistent with G.S. 143-215.1(f4) and G.S. 143-215.1(f5), as enacted by Section 1 of S.L. 2023-55.

SECTION 18.1.(d) Additional Rulemaking Authority. – The Commission shall adopt rules to amend the Dwelling Wastewater Design Flow Rate Rule and the Demonstration of Future Wastewater Treatment Capacities Rule consistent with subsection (c) of this section. Notwithstanding G.S. 150B-19(4), the rules adopted by the Commission pursuant to this section shall be substantively identical to the provisions of subsection (c) of this section. Rules adopted pursuant to this section are not subject to Part 3 of Article 2A of Chapter 150B of the General Statutes. Rules adopted pursuant to this section shall become effective as provided in G.S. 150B-21.3(b1), as though 10 or more written objections had been received as provided in G.S. 150B-21.3(b2).

SECTION 18.1.(e) Applicability and Sunset. – Rules adopted pursuant to subdivision (1) of subsection (c) of this section apply to all permits for dwelling units issued on or after November 1, 2023. This section expires when permanent rules adopted as required by subsection (d) of this section become effective.

SECTION 18.2. The Environmental Management Commission shall study whether to amend the flow rates established pursuant to 15A NCAC 02T .0114(c) for schools, charter schools, boarding schools, preschools, and day care facilities, including schools with or without cafeterias, gyms, and showers, to consider reduced water consumption associated with new plumbing fixtures and appliances.

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15A NCAC 18C .0409 SERVICE CONNECTIONS

(a) Local Water Supply Plan. Units of local government that are operating under a local water supply plan in accordance with G.S. 143-355(l) shall not be limited in the number of service connections.

(b) No local water supply plan. A public water system that does not have a local water supply plan as stated in Paragraph (a) shall limit its number of service connections as follows:

(1) A public water system shall meet the daily flow requirements specified in Table 1:

Table 1: Daily Flow Requirements

Type of Service Connection	Daily Flow for Design
Residential	400 gallon/connection
Mobile Home Parks	250 gallon/connection
Campgrounds and Travel Trailer Parks	100 gallon/space
Marina	10 gallon/boat slip
Marina with bathhouse	30 gallon/boat slip
Rest Homes and Nursing Homes	
with laundry	120 gallon/bed
without laundry	60 gallon/bed
Schools	15 gallon/student
Day Care Facilities	15 gallon/student
Construction, work, or summer camps	60 gallon/person
Business, office, factory (exclusive of industrial use)	
without showers	25 gallon/person/shift
with showers	35 gallon/person/shift
Hospitals	300 gallon/bed

or;

(2) A public water system shall meet the daily flow requirements calculated as follows:

(A) If records of the previous year are available that reflect daily usage, the average of the two highest consecutive days of record of the water treated shall be the value used to determine if there is capacity to serve additional service connections. Unusual events, such as massive line breaks or line flushings, shall not be considered.

(B) If complete daily records of water treated are not available, the public water system shall multiply the daily average use based on the amount of water treated during the previous year of record by the appropriate factor to determine maximum daily demand, as follows:

(i) A system serving a population of 10,000 or less shall multiply the daily average use by 2.5; or

(ii) A system serving a population greater than 10,000 shall multiply the daily average use by 2.0.

(c) A supplier of water shall include the impact that demands from anticipated in-ground irrigation systems, multi-family units, or vacation rental homes will have on the daily flow needs determined in Paragraph (b) of this Rule.

(d) If two years of metered usage data exists, a supplier of water may recalculate the daily flow requirements based on the actual usage. If actual demands are lower than the projected demand, recovered supply may be used to support additional connections in accordance with Paragraph (b) of this Rule.

(e) A supplier of water shall be exempt from using Table 1 in Subparagraph (b)(1) of this Rule and any other design flow standards established by the Department or the Commission to determine the daily flow requirements, provided that a professional engineer licensed pursuant to G.S. 89C prepares, seals, and signs documentation supporting alternative daily flow requirements that are sufficient to sustain the water usage required in the engineering design by using low-flow fixtures or flow reduction technologies.

History Note: *Authority G.S. 130A-315; 130A-317; P.L. 93-523;*
Eff. July 1, 1994;
Readopted Eff. July 1, 2019.

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