TOWN OF HAW RIVER, NORTH CAROLINA

PRELIMINARY WATER AND WASTEWATER SYSTEM DEVELOPMENT FEE ANALYSIS

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EXECUTIVE SUMMARY

The enclosed analysis was performed in accordance with North Carolina House Bill 436 ("HB-436") and serves to establish a System Development Fee structure for the Town of Haw River (the "Town").

All elements of the water and wastewater distribution, collection, and conveyance network were inventoried and evaluated against industry standards as outlined in the Current Utility Infrastructure section of this report.

Currently the Town's water and wastewater systems have sufficient capacity to serve new development which is projected to occur within a ten-year planning window and beyond. As such, a system buy-in approach which seeks to establish the monetary cost for new development to "buy" a proportionate share of existing system capacity is utilized in this analysis.

Pursuant to HB-436 and methodology prescribed by the American Water Works Association, the following analysis identifies Net Asset Valuations of $3,332,332 and $10,423,683 for the water and wastewater systems respectively.

HB-436 defines a service unit as "a unit of measure, typically an equivalent residential unit, calculated in accordance with generally accepted engineering or planning standards." For the purposes of this analysis, the Town establishes a service unit as an Equivalent Residential Unit ("ERU") which consumes an average of 240 gallons per day through a standard ¾" water meter. For any development which requires a different size water meter, a service unit equivalent is established at a multiplier based on its operating capacity with respect to the ¾" water meter. The equivalency factors and associated System Development Fee by water meter size are shown in **Table 1**.

Based on current system valuations, the Town may assess a maximum System Development Fee of **$3,644** per ERU.

Table 1: Maximum Assessable System Development Fee for Commonly Used Water Meters†

Water Meter Size	Max Flow (GPM)	Equivalent Residential Unit‡ (ERU)	Maximum Assessable Water Fee Per ERU	Maximum Assessable Wastewater Fee Per ERU	Total Maximum Assessable Fee Per ERU
3/4"	30	1.00	$1,143	$2,502	$3,644
1"	50	1.67	$1,904	$4,169	$6,074
1 1/2"	100	3.33	$3,808	$8,339	$12,147
2"	160	5.33	$6,093	$13,342	$19,436
3"	350	11.67	$13,329	$29,186	$42,516
4"	630	21.00	$23,993	$52,535	$76,528
6"	1,300	43.33	$49,509	$108,406	$157,915

†Applicable System Development Fee(s) for development requiring smaller or larger water meters will be calculated on a project specific basis using the above rates and methodology.
‡ERU multiplier adapted from AWWA Manual of Water Supply Practices-M1, *Principles of Water Rates, Fees, and Charges.*

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INTRODUCTION

The Town of Haw River (the "Town") retained the services of Alley, Williams, Carmen & King, Inc. for the purpose of preparing a written analysis and establishing a System Development Fee in accordance with House Bill 436[1] ("HB-436") as enacted by the North Carolina General Assembly and ratified on 29 June 2017. HB-436 is entitled "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". It amends Chapter 162A of the North Carolina General Statutes and enables local government units ("LGU") to assess a System Development Fee on new development within their territorial limits.

A System Development Fee is a one-time levy assessed against new water and wastewater consumers for system capacity. Proceeds from this fee are then used to fund the design and construction of growth related water and wastewater system capital projects, and/or to reimburse the LGU for previous water and wastewater capacity related capital expenditures.

Currently the Town's water and wastewater systems have sufficient capacity to serve new development which is projected to occur within a ten-year planning window and beyond. As such, a system buy-in approach which seeks to establish the monetary cost for new development to "buy" a proportionate share of existing system capacity is utilized in this analysis.

This report relies on existing Town financial reporting documents, the American Water Works Association Manual M1, *Principles of Water Rates, Fees, and Charges*[2] ("AWWA Manual"), HB-436, and where necessary sound engineering judgement to satisfy the requirements of HB-436 and provide the Town with a schedule of maximum allowable System Development Fee assessments.

CURRENT UTILITY INFRASTRUCTURE

Components of the Town's current water and wastewater systems include the following:

- The Town retains a 1.500 million gallon per day ("MGD") capacity allocation in the City of Burlington's drinking water production facilities and allocates 0.800 MGD to the Orange-Alamance Water System. Current average day use by the Town is approximately 0.127 MGD (18.1% of remaining 0.700 MGD allocation). Average daily water demand for the year 2027 is projected to total 0.254 MGD (36.3% of remaining 0.700 MGD allocation). The Town retains adequate water supply capacity to meet projected demand.

- The Town owns and maintains approximately 21 miles of water distribution lines. Existing distribution lines are generally sufficient to meet minimum design criteria for demand and pressure. Future improvements may be needed in order to improve overall levels of service, increase system redundancy, and extend service to unserved areas.

- The Town retains a 1.000 MGD capacity allocation in the City of Burlington's wastewater treatment facilities. Current average daily return flow is approximately 0.211 MGD (21.1% of 1.000 MGD allocation). Average daily return flow for the year 2027, with allowances for inflow and infiltration, is projected to total 0.293 MGD (29.3% of 1.000 MGD allocation). The Town retains adequate wastewater treatment capacity to meet projected demand.

- The Town owns and maintains a wastewater collection and conveyance system comprised of eight (8) pump stations, approximately four (4) miles of force main, and approximately 33 miles of gravity sewer. Existing pump stations and collection/conveyance lines have sufficient capacity to meet projected capacity needs. Future improvements may be needed in order to prevent sanitary sewer overflows, improve overall system efficiency, and extend service to unserved areas.

GROWTH AND POPULATION TRENDS

Since 2010 the Town's annual growth rate has averaged approximately 0.63% as reported by the North Carolina Office of State Budget and Management. The Town uses this data to aid in long-term capital planning, and corresponding growth projections were utilized for the purposes of this analysis.

ESTABLISHED LEVEL OF SERVICE

HB-436 defines a service unit as "a unit of measure, typically an equivalent residential unit, calculated in accordance with generally accepted engineering or planning standards." For the purposes of this analysis, projected demand is established using design flowrates per Section 15A NCAC 02T .0114(b) of the North Carolina Administrative Code[3] which states, in part, the minimum volume of wastewater flow from a residential dwelling shall be considered to be 240 gallons per day ("gpd"). Therefore, the Town establishes a service unit as an Equivalent Residential Unit ("ERU") which consumes an average of 240 gpd through a standard ¾" water meter. **Table 2** shows future population projections and resulting increases in demand.

Table 2: 10-Year Planning Window Additional ERU's

Use	2016		2022		2027		Increase	
	ADF (gal)	**ERU**	**ADF** (gal)	**ERU**	**ADF** (gal)	**ERU**	**ADF** (gal)	**ERU**
Residential	101,000	878	218,812	912	225,792	941	124,792	63
Commercial	12,000	50	12,461	52	12,858	54	858	4
Industrial	12,000	50	12,461	52	12,858	54	858	4
Institutional	1,000	4	1,038	4	1,072	4	72	0
Total	**126,000**	**982**	**244,772**	**1,020**	**252,580**	**1,053**	**126,580**	**71**

SYSTEM BUY-IN ASSESSMENT

The system buy-in method values capacity in existing system components, with the resulting fee intended to achieve capital equity between existing and future customers. For the purposes of this analysis, a replacement cost new, less depreciation, approach was selected as the most accurate valuation method available. The Town's Comprehensive Water System and Wastewater System inventories were utilized to establish total replacement cost escalated to present day values, with all inventoried system components assumed to be 50% depreciated. Additional valuation adjustments for outstanding debt principal were obtained from the Town's Comprehensive Annual Financial Report[4] for the year ended 30 June 2017, resulting in total system valuations of $3,332,332 and $10,423,683 for the water and wastewater systems respectively.

Water System		Wastewater System	
Non-depreciable Capital Assets	$0	Non-depreciable Capital Assets	$0
Depreciable Capital Assets	$8,140,664	Depreciable Capital Assets	$21,737,895
Accumulated Depreciation	($4,070,332)	Accumulated Depreciation	($10,868,948)
Debt Credits, Grants, Etc.	($738,000)	Debt Credits, Grants, Etc.	($445,265)
Net Asset Value	$3,332,332	**Net Asset Value**	$10,423,683
Existing Capacity (GPD) †	700,000	Existing Capacity (GPD)	1,000,000

†Refer to Current Utility Infrastructure section of this report.

In keeping with methodology prescribed in the AWWA Manual, a system buy-in fee is calculated as shown below. **Table 3** shows the Town may assess a maximum System Development Fee of $15.18 per gallon of average daily demand. Assuming average daily demand of 240 gpd per ERU, this equates to $1,142.51 for water service and $2,501.68 for wastewater service, totaling $3,644.20 per ERU.

$$\frac{Buy\ In\ Fee}{Gallon} = \frac{\text{Depreciable Assets} - \text{Accumulated Depreciation} - \text{Debt Principal Outstanding} - \text{Grants, etc.}}{\text{Total System Capacity (gal.)}}$$

Table 3: Maximum Permissible Buy-In System Development Fee

	$/Gal ADF	$/ERU
Water (1 ERU = 240 gpd)	$4.76	$1,142.51
Wastewater (1 ERU = 240 gpd)	$10.42	$2,501.68
Total	$15.18	$3,644.20

FEE ADOPTION, ADMINISTRATION, AND MAINTENANCE

HB-436 provides a prescriptive guide for the adoption, administration, and on-going maintenance of a System Development Fee analysis and the revenue it generates. As such, any LGU considering adoption of a System Development Fee should consult legal counsel regarding HB-436, the authorization of a System Development Fee, and subsequent use of revenue.

In order to establish a System Development Fee per service unit of new development an LGU must adopt this written analysis via resolution or ordinance. Prior to an LGU's governing body considering adoption of this and any future System Development Fee analyses, the written analysis shall be posted publicly for a minimum of 45 days in order to solicit public comment regarding its contents. Once the public comment period has expired, the analysis preparer shall consider all received comments and revise or modify the analysis as necessary. The LGU's governing body must subsequently convene one (1) public hearing prior to considering adoption of the analysis and incorporating the resulting System Development Fee into its adopted budget and/or larger fee schedule. An adopted System Development Fee analysis must be reviewed and updated a minimum of every five (5) years. In the case of LGUs experiencing rapid development more frequent updates may be warranted.

HB-436 mandates System Development Fee revenue be accounted for by means of a dedicated Capital Reserve Fund and places certain restrictions on how an LGU may appropriate that revenue. As such, any

LGU considering adoption of a System Development Fee should consult with legal counsel and a qualified financial professional regarding HB-436, the authorization of a System Development Fee, and subsequent use of revenue.

CONCLUSIONS

Based upon 10-year growth projections, an estimated additional 71 ERU's will require water and wastewater service by the year 2027. For the purposes of this analysis an ERU represents a hypothetical service unit which is considered equal to one (1) single-family residential connection and is assumed to consume approximately 240 gallons per day through a standard ¾" water meter.

Currently the Town's water and wastewater systems have sufficient capacity to serve new development which is projected to occur within the 10-year planning window and beyond. As such, a system buy-in approach which seeks to establish the monetary cost for new development to "buy" a proportionate share of existing system capacity is utilized in this analysis. The system buy-in fee is based upon current system valuations derived using a replacement cost new less depreciation methodology and from information contained in the Town's annual financial reporting documents. Given projected increases in ERU's and current system valuations, the Town may assess a total maximum System Development Fee of **$3,644** per ERU. For any development which requires a different size water meter, a service unit equivalent is established as a multiplier based on that meter's operating capacity with respect to the ¾" water meter. The equivalency factors and associated System Development Fee by water meter size are shown in **Table 1**. These values represent the maximum System Development Fee assessment per ERU permissible under HB-436. The Town may elect how to incorporate these values into their current fee structure, but in no case is it permissible under HB-436 to assess a fee greater than that which is supported by this analysis.

REFERENCES

[1] *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 Assembly of North Carolina. Session 2017. Session Law 2017-138; House Bill 436.

[2] "VII.2." *M1: Principles of Water Rates, Fees, and Charges*, by Chris Woodcock et al., Seventh ed., American Water Works Association, 2017, pp. 321–347.

[3] 15A NCAC 02T .0114(b). *Wastewater Design Flow Rates*. (Effective 1 September 2006). North Carolina Administrative Code.

[4] *Comprehensive Annual Financial Report*. (Year Ended June 2017). Town of Haw River.