



Memorandum

TO: *Selena Coffey*

FROM: *Steven Miller*

DATE: *March 30, 2018*

SUBJECT: *Weaverville System Development Fee Analysis*

WR Martin was commissioned by the Town of Weaverville to analyze their Water System Development Fees (SDF) considering current events, so they comply with North Carolina House Bill 436 (HB 436). The bill was ratified to address fee inconsistencies among public providers including calculation methodologies and implementation. The new law provides specific guidelines that public water providers must follow to charge SDFs effective October 1, 2017. The law provides a grace period through July 1, 2018 for public providers to update fees in accordance with the new procedures and conditions.

This analysis focused on reviewing the latest available fixed asset information and debt service costs as of June 30, 2018 to determine the cost of capacity for the Town, and on developing other assumptions necessary to establish appropriate fee levels for different types of customers using the American Water Works Association (AWWA) System Buy In approach. This analysis documents the results of the various analyses and our recommendations for implementing SDFs to be charged to new customers connecting to the water systems.

SDFs are defined as one-time charges assessed against new development to recover a proportional share of the costs of capital facilities constructed to provide service capacity for new customers connecting to the water systems. Typically, the cost basis for setting capacity fees is based on the system components that are necessary to serve, and that provide benefit to, all customers. These components typically include land, tanks, treatment works, lines, and other equipment.

There are three approaches for calculating water SDFs outlined in HB 436. They include the following:

1. Buy In
2. Incremental Cost
3. Combination of the above

The Buy-In (Equity) Approach is used when a system has enough capacity to serve new development so developers buy in to existing infrastructure that the rate base has built and maintained. The Incremental Cost approach is used when new facilities must be built to serve new development. The Combination method is chosen when a system foresees a blend of existing and new infrastructure to serve anticipated development over the applicable planning horizon.

The System Buy-In Approach is consistent with the Town's status for it still has enough capacity to serve new development. This approach calculates a fee based upon the proportional cost of each user's share of existing capacity in core facilities. The cost of the facilities is based on fixed assets records and can include escalation of the depreciated value of those assets to current dollars. System assets include those listed in the Town depreciation report, County tax records, and staff records.

North Carolina law now provides that these fees are one-time charges imposed at one of the following times depending upon the type of development:

1. New development that involves subdivision of land
 - a. Time of plat recordation, or
 - b. When water service for development is committed by local government
2. All other development
 - a. Time of application for connection of individual unit to water service

They are designed to recover all or a portion of the capital investment made by the Town to provide sufficient capacity in its system to serve new users. It should be emphasized that SDFs are charged to only new customers and consequently save existing users substantial capital costs over time.

The following are notable SDF attributes according to the University of North Carolina Environmental Finance Center's latest survey:

- 39% of water and 44% of sewer rate structures in North Carolina charge SDFs.
- Nearly 78% of SDFs either vary by meter size or are fixed. Fees based upon usage, acreage, square footage, number of bedrooms, or line size are uncommon in North Carolina.
- Statewide average residential water and sewer SDFs are approximately \$1,000 and \$1,498 respectively.

After reviewing the alternative SDF methodologies, the consensus was to pursue the American Water Works Association (AWWA) System Buy In methodology because it was defensible, relatively easy to explain to customers, and generally easy to implement. Our approach and conclusions are as follows:

BUY IN METHODOLOGY

SDFs using the Buy In methodology are derived from estimated values for the water system's assets. The calculation of the values uses a tabulation of water assets derived from the Town's depreciation report and other sources.

Because the Town's depreciation report lacks records for some water assets, we have analyzed the latest available GIS data for water lines and utilized County tax records for land values. This GIS data, showing the diameters and linear feet, was used to determine a value of the components using today's hard and soft costs for line installation. The age of the lines was estimated by Town staff since the detail was not available. After calculating a cost for replacing each line in today's dollars, we depreciated each cost according to the estimated age. Any line data from the depreciation report was replaced with the data derived from the GIS reports. Water line data and other valuation estimates are shown in the Appendix.

It is estimated that the water system's replacement value is approximately \$14.2 million, as shown in Table 1. Also included in the rightmost column of the table is the source for each estimate. However, to account for outstanding debt used to pay for the system, the principal balances of the Water Enterprise Fund's loans totaling \$2.149 million are deducted from the water system's values to determine the net system value. HB 436 also requires the deduction of three grant awards from 1997 and 2000 with a depreciated value of \$2.816 million. After debt and grant awards are removed, the net value of the water system is approximately \$9.242 million (see Table 3). These values have been reviewed by the Town manager and staff.

TABLE 1
WEAVERVILLE
WATER SYSTEM VALUE

	BOOK VALUE	SOURCE
WATER		
BUILDING	\$444,390.54	DEPRECIATION REPORT
LAND	\$1,363,700.00	TAX RECORDS
LINES	\$10,919,636.93	LINE DATA
RESERVOIR	\$75,890.33	DEPRECIATION REPORT
TANKS	\$389,590.60	DEPRECIATION REPORT
VEHICLES & EQUIPMENT	\$1,013,783.65	DEPRECIATION REPORT
WTP	\$1,637,316.20	DEPRECIATION REPORT
TOTAL VALUE OF WATER SYSTEM	\$14,206,992.05	

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To allocate the system value to users, an analysis of existing customer usage is necessary to determine the equivalent units of residential customers. First, residential users are separated from non-residential users. Then, the average monthly flow per residential user is calculated using historical flow data. For this study, user data as of December 31, 2017, was used as follows (see also Table 2)::

- 1,839 residential inside water users,
- 731 residential outside water users,
- 172 commercial inside water users and
- 41 commercial outside water users

The average monthly residential water flow of 4,744 gallons is reflected in Table 2.

TABLE 2						
WEAVERVILLE						
USER EQUIVALENTS						
		Number of users	Monthly Consumption in gal	Annual Consumption in gal	Average Monthly Consumption per User * in gal	User Equivalents
WATER	Residential In	1,839	9,201,202	110,414,424	5,003	1,940
	Residential Out	731	2,990,302	35,883,624	4,091	630
	Commercial In	172	4,377,143	52,525,716		923
	Commercial Out	41	1,112,452	13,349,424		235
	TOTAL	2,783	17,681,099	212,173,188	4,744	3,727

* Average consumption figures taken from Town usage summary. Consumption divided by weighted average residential consumption to yield residential user equivalent.

Inside residential water customers use more water per month than the weighted average usage of all customers, 5,003 gallons vs 4,744 gallons. Therefore, when the count of 1,839 residential inside water users are applied to the weighted average of 4,744 gallons, the overall count of equivalent residential users (ERUs) is 1,940 or 1,839 customers multiplied by 5,003 gallons and divided by 4,744 gallons. The same application of residential outside customer counts and usage yields 630 ERUs.

Commercial customers are converted to ERUs using the same prorated methodology. Once the count within each customer class is converted to an ERU, the number of water ERUs are totaled to yield 3,727 water ERUs. The water system net values are further divided by the respective number of ERUs to yield maximum SDFs for a 5/8-inch meter of \$2,480, as shown in Table 3.

TABLE 3		
WEAVERVILLE		
SYSTEM DEVELOPMENT FEES		
TOTAL VALUE OF WATER SYSTEM	\$14,206,992	
LESS GRANTS *	\$2,816,000	
LESS OUTSTANDING DEBT PRINCIPAL	\$2,149,000	
NET	\$9,241,992	
DIVIDED BY RESIDENTIAL USER EQUIVALENTS	3,727	
RECOVERY CHARGE FOR 5/8 INCH METERS	\$2,480	WATER
* Source: Town staff.		

For non-residential customers with larger meters, the fees for the smallest residential meter are used and then scaled up by their meter flow ratios for each meter size, as specified by the AWWA. For example, a 1-inch meter has a maximum water flow of 50 gallons per minute, which is 2.5 times greater than the 5/8-inch meter maximum flow of 20 gpm. Therefore the 5/8-inch meter fee is multiplied by 2.5 to yield the 1-inch meter fee, as shown in Table 4. This method provides an approach that is simple to administer and equitable for most new customers.

TABLE 4		
WEAVERVILLE		
MAXIMUM SYSTEM DEVELOPMENT FEES FOR VARIOUS METER SIZES		
<i>Connection size</i> <i>(inches)</i>	<i>Max flow</i> <i>gpm</i>	<i>WATER</i>
5/8	20	\$2,480
1	50	\$6,200
1.5	100	\$12,400
2	160	\$19,840
3	320	\$39,680
4	500	\$62,000
6	1000	\$124,000
8	1600	\$198,400
10	2300	\$285,200
12	3100	\$384,400

OTHER HB 436 CONSIDERATIONS

Upon receiving SDF calculations, the Town is required by HB 436 to adhere to the following procedures:

- PUBLIC COMMENT – The Town must allow for public comment on the Analysis. The public comment period must last for at least 45 days. The fee sent out for comment is as prepared by the professional, not the governing board. Likewise, the fee preparer of the analysis considers the public comment, not the governing board.
- PUBLIC HEARING – The Town must conduct a public hearing after the comment period. After the public hearing, the professional determines if any modifications are required.
- ADOPTION - After the consideration of comments, the fee must be adopted by the governing board at a later date. The fee must be adopted by resolution or ordinance and published in the Town's annual budget ordinance.
- USE - The new law prescribes specific uses for the funds collected through SDFs. They include:
 - Costs of previously completed capital improvements for which capacity exists and capital rehabilitation projects. Rehabilitation includes repairs, maintenance, modernization, upgrades, updates, replacement, or correction of deficiencies of any facility.
 - Expansion or other undertaking to increase the level of preexisting level of service for existing development.

RECOMMENDATIONS

An alternative that helps manage the magnitude of SDFs is charging a fraction of the system values. The Town has the flexibility to discount the total valuation of its systems by a factor that the Town deems appropriate. For example, the Town may continue charging its current SDFs shown below since they are lower by 76% for 5/8-inch water meters and compute to \$600 for water users with 5/8-inch water meters. The fees for meter sizes larger than 5/8 inch are also calculated by prorating the meter size by the maximum flow factor of each meter, as shown in Table 5.

TABLE 5		
WEAVERVILLE		
CURRENT SYSTEM DEVELOPMENT FEES FOR VARIOUS METER SIZES		
<i>Connection size (inches)</i>	<i>Max flow gpm</i>	<i>WATER</i>
5/8	20	\$600
1	50	\$1,500
1.5	100	\$3,000
2	160	\$4,800
3	300	\$9,000
4	500	\$15,000
6	1000	\$30,000

CONCLUSIONS

The Town's past SDFs have provided a diversification of the Town's water fund revenue stream and a revenue source that lessens future water rate increases. These fees should be viewed as important to ensure the equitable distribution of cost responsibilities between existing and future rate payers. Consequently, they must be reviewed at least every five years to account for changes in system usage and valuation and abide by SB 436.

APPENDIX

1. Depreciation Report
2. Water Line Data
3. County Tax Records

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DEPRECIATION REPORT

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WATER LINE DATA

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COUNTY TAX RECORDS

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