

**Town of Meredith, NH
WATER SYSTEM COMMITTEE**

**SEVENTH REPORT
To
Board of Selectmen**

Water and Sewer Rate Structures and Rates

July 19, 2010

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1. Executive Summary

Increased revenues from water and sewer rents are required to insure the water and sewer enterprises are able to liquidate operating and maintenance costs and to build modest reserves for major maintenance and infrastructure replacement.

Water and sewer rates have not been increased incrementally as costs increased requiring a substantial adjustment in the near future. In addition to increasing operating and maintenance expenses, water reserves have been severely depleted over the past 18 months to cover the cost of major equipment replacement and maintenance. Charges from the Winnepesaukee River Basin project for sewage disposal continue to increase and are expected to do so for the next several years.

The Meredith Water System Committee has studied the current rate system and costs for the next few years resulting in the recommendations following in this report.

The committee is not only recommending increased rates to cover increasing costs and the need for modest reserves, but also simplification of the rate structures, similarity between the water and sewer rate structures and rates which spread the burden more equitably over the customer base.

Transitioning from the current structures and rates to the recommended system will not be easy. Customers with differing usages and in different classes (residential and non-residential) will feel the burden in differing degrees.

To insure additional burden does not fall on the general taxpayers this work needs to be done. If perhaps not exactly as the committee has recommended, it must be done soon in some practical manner.

2. Recent Rate Setting Activity

A. September 28, 2009 – Fifth Water System Committee report to the Board of Selectmen:

Recommendation to increase access, connection and service fees.

Also to revise rules for calculating Available Spare Capacity, to update the Equivalent Units table in the Water and Sewer Use Ordinances to be consistent with recently published DES rules and to make miscellaneous changes to the ordinances.

These recommendations resulted in a public hearing and changes to the ordinances on October 19, 2009.

B. February 16, 2010 – Sixth Water System Committee report to the Board of Selectmen:

Recommendation to accept policies for rate structure and rates;

Capital split ratio – leave at 60%/40% rate payers/general taxpayers (effectively 69/31).

Division of rates – continue with fixed and consumption charges.

Tiered rates – continue with tiered rate structure but same for residential and commercial users.

Increased revenue – increased revenue will be required to cover all costs and to build modest reserves for emergencies and major maintenance.

Seasonal rates – recommended to discontinue seasonal rates.

Hydrant rental fee – continue but reduce cost to taxpayers.

Sewer rates consistent with water rates – use same system structure as water but different rates.

Eliminate using equivalent units to calculate fixed charges for commercial sewer customers.

Un-metered sewer users – charge approximately the same as average users. Require meters for new construction. Do not require non-metered residences to install meters.

During this meeting the committee was asked to write a paper making a case for general taxpayer support for portions of the water and sewer enterprises. This paper is Item 1 in the Appendix.

3. Water System Performance Update

- A. Demand remains at expected levels – typically 250,000 to 300,000 gallons per day.
- B. Capacity of the treatment plant is at 100%
- C. Peaking factors remain steady at approximately 1.3.
- D. Non-metered losses are in control at approximately 10%-12% (more history required).

Charts (Item 2) in the Appendix will illustrate these items.

4. Need for Revised Rate Structure and Rates

Current water rates are not producing sufficient revenue to cover operations, maintenance and to build modest reserves for major maintenance and equipment replacement.

Water reserve funds have been severely depleted in the past 18 months refurbishing the water treatment plant.

Sewer charges from the Winnepesaukee River Basin continue to increase and are expected to continue to do so in the future (although significantly increased Meredith participation and a flow-based charging system in the future possibly will give lower costs in several years).

Current rent revenue for water and sewer and projections for the future are shown below:

	Water and Sewer Rent Revenue (\$ per Year)				
	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Water	438,794	500,350	563,815	621,421	644,535
Sewer	571,093	765,438	859,999	957,224	1,007,881

The current water rate structure is complicated with seasonal rates, block structures, inclining block rates and rates that differ between residential and commercial users.

The current sewer rate structure has no seasonal rates and all users pay the same consumption rate. However it has a relatively high fixed charge compared to the consumption rate and residential and commercial users are charged different fixed rates. The fixed charge for commercial users is determined by dividing their usage by the average single dwelling usage to calculate equivalent units which are then multiplied by the fixed rate of \$35/qtr.

As discussed thoroughly in the February 16, 2010 workshop, the committee recommends simplifying the rate structure and charging all customers the same rates for the same services.

The current water and sewer structures and rates are:

Water						
<u>Residential</u>	Off-Season			In-Season		
	Fixed*	Consumption (\$/ccf/q)		Fixed*	Consumption (\$/ccf/q)	
	\$/Q	0-15 ccf/q	>15 ccf/q	\$/Q	0-15 ccf/q	>15 ccf/q
(for 3/4" meter)	21.08	1.18	2.64	21.08	2.67	5.50
<u>Commercial</u>						
	Fixed*	Consumption (\$/ccf/q)		Fixed*	Consumption (\$/ccf/q)	
	\$/Q	0-90 ccf/q	>90 ccf/q	\$/Q	0-90 ccf/q	>90 ccf/q
(for 1" meter)	33.38	1.18	1.97	33.38	2.67	4.27

Sewer						
	Fixed	Consumption (\$/ccf/q)		Fixed	Consumption (\$/ccf/q)	
	\$/Q					
Residential	35.00	1.80		35.00	1.80	
Commercial	35.00 x EU	1.80		35.00 x EU	1.80	

* Water fixed charges increase with meters larger than 3/4" per a ratio of meter size (to be changed to AWWA ratios).

5. Water and Sewer Demographics

The majority of water users consume a very small amount of water while a very small number of users consume the majority of the water. This means fixed rates have a dominant effect on the low end users while consumption rates are the greatest concern to high end users.

Although the same is true for metered sewer users, sewer accounts differ considerably from water accounts with over 26% of all accounts being non-metered therefore being charged a fixed fee independent of consumption.

Currently approximately 24% of water revenue is from fixed rates while over 45% of sewer revenue is from fixed rates resulting from a relatively high fixed rate (\$35.00/q) and a very low consumption rate (\$1.80/ccf/q). This high fixed cost for sewer users is exacerbated for commercial sewer customers by multiplying the fixed rate by the number of equivalent units for each account.

These demographics create a challenge when changing the structure and setting new rates to treat all classes as fairly as possible. The table below shows user demographics for Meredith in 2009 in more detail.

	WATER			SEWER			
	0-10 ccf/q	11-50 ccf/q	>50 ccf/q	0-10 ccf/q	11-50 ccf/q	>50 ccf/q	
Usage %	10.1	37.7	52.1	9.6	36.9	53.5	Metered Accounts Only
Account %	58.5	37.8	3.7	50.6	43.8	5.6	
No.	665	429	42	491	425	54	
Revenue %	16.7	38.5	44.7	24.1	38.4	37.5	
Usage %				7.4	51.5	41.1	All Accounts (Includes 348 Non- Metered Acct's)
Account %				37.2	58.7	4.1	
No.				491	773	54	
Revenue %				18.9	49.9	29.4	

6. Rate Setting Process and Rules Development

A detailed and often iterative process was used to determine the rate structure and rates recommendations by the Water System Committee. For those interested in this detail see Item 3 in the Appendix.

One of the first steps was to develop a set of rules for determining the rate policy, structure and rate determination. This was helpful in deciding what our goals for the new rates would be before dealing with numbers. Retroactively rules were written for access, connection and service fees even though decisions about them had already been implemented in October 2009.

These rules will be found in the Appendix as Item 4.

Other major steps in the process were:

- Understand the revenue and usage patterns of the current rates (see demographics above) and map them into the recommended 3 tiers.

- Create a set of Rate Models to calculate the revenue generated by different fixed and consumption rates.

- Compare new rates to current ones by classes of users to determine the effect the new rates would have on them and compare the new rates to other towns in New Hampshire.

Modeled in detail were 20% and 30% of revenue generated by fixed charges, inclining and uniform block rates and those same models adjusted to relieve what appeared to be excessive added burden to non-metered sewer users. The end result was a recommendation for 20% of revenue from fixed charges and uniform block rates.

20% of revenue from fixed charges was selected to provide lower rates for low-use customers. Uniform rates were selected to mitigate consumption charges for large-use customers.

7. Rate and Structure Recommendations

The Water System Committee recommends this structure and set of rates be implemented for the 4th quarter of 2010 and for all of 2011, 2012 and 2013:

	Recommended Rates				
	2009 (Equiv)*	2010	2011	2012	2013
Water					
Fixed (\$/Q)**	18.80	21.44	24.13	26.61	27.56
Consumption (\$/ccf/q)***	3.56	4.06	4.57	5.04	5.22
Sewer					
Fixed (\$/Q)**	25.60	34.77	39.15	43.61	45.88
Consumption (\$/ccf/q)***	3.27	4.44	5.00	5.57	5.86
Non-Metered (\$/q)	76.72	104.17	117.31	130.68	137.48

* Equivalent 2009 rates if new rate structure was in use.

** Base rate for ¾" meter. To be increased for larger meters per AWWA-M2 ratios instead of current Meredith ratios (see below)

*** Recommend a structure of 3 usage blocks (tiers) 0-10ccf/q, 11-50 ccf/q and >50 ccf/q. At this time uniform rates for these 3 blocks are recommended but this structure allows better analysis in the future and ease of converting to inclining rates in the future.

Meter Ratios		
Size	Meredith	AWWA-M2
¾"	1.00	1.00
1"	1.58	1.40
1 ½"	2.68	1.8
2"	3.63	2.9
3"	4.87	11.0
4"	7.57	14.0
6"	7.57	21.0

7. Rate and Structure Recommendations (continued)

Fire Service Charges

These charges are fixed quarterly charges scaled by connection pipe size to private hydrants and sprinkler systems and currently generate about \$28,000 in annual revenue.

The Town realizes savings in fire-fighting costs when fighting a fire in a facility with sprinklers and incurs virtually no cost to maintain these connections. Therefore the committee recommends eliminating these charges provided the customer is required to maintain hydrants and sprinkler systems including clearing hydrants of snow in winter.

Irrigation Service Charge

Irrigation meters are installed as consumption meters and therefore are billed fixed and consumption charges but do not result in sewer charges. The committee recommends the fixed portion be billed as a typical water account but the consumption charges be set at 2x the typical rate.

Hydrant Maintenance

Charged by the utility to the Town at a current rate of \$69,000 per year for 132 hydrants. The committee recommends leaving this charge as is for now.

Administrative Costs

Currently the town does not bill the utilities for administrative services. The committee recommends not charging for these services at this time.

Monthly Billing Cycles

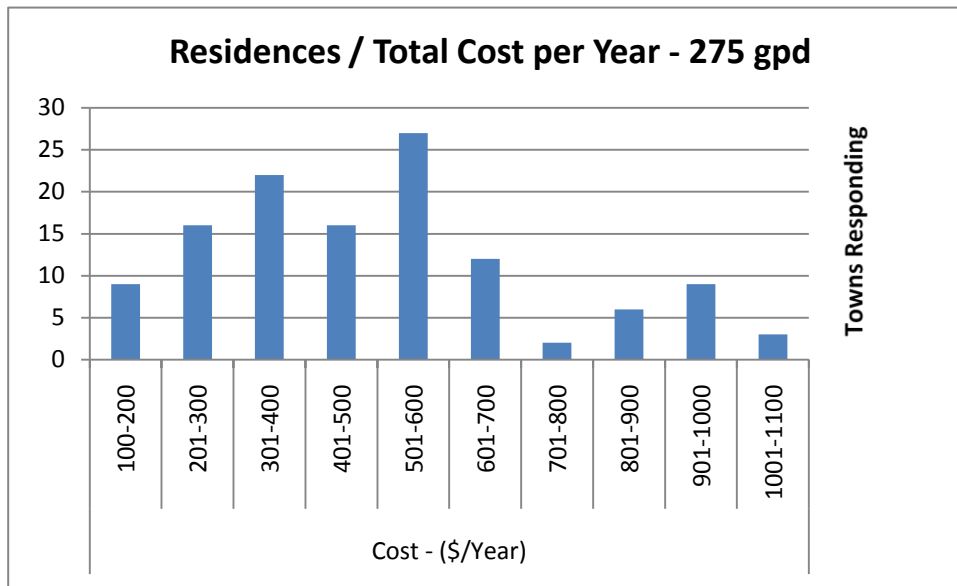
Although monthly billing increases the opportunity for conservation, the administrative load it would create prevents its use at this time.

8. Comparisons and Effect on Rate Payers

Comparison to Other Towns

Below is the result of a rate comparison study recently conducted by DES showing how the proposed new Meredith rates compare to other towns in New Hampshire.

Comparison of Meredith Proposed Rates to DES 2009 Rate Survey Results in Other Communities

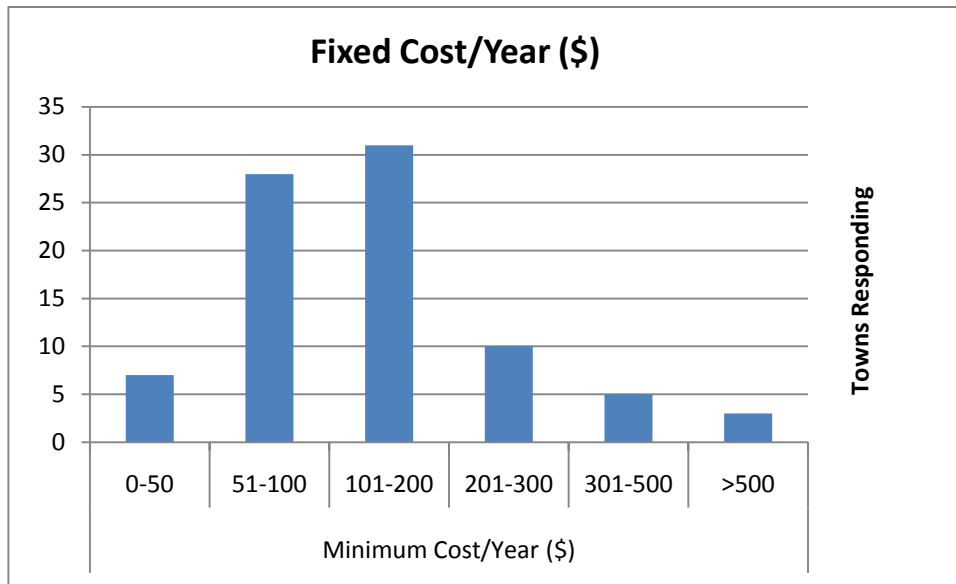


Meredith costs based on Version 1A
20% fixed; Uniform block rates.

Meredith Cost - 275 gpd/134 ccf/year

Year	\$/Q	\$/yr.
2009		501.00
2009 New	134.57	538.28
2010	157.45	629.80
2011	177.23	708.90
2012	195.45	781.80
2013	202.43	809.72

Wolfeboro	1058.65
Tilton-Northfield	611.65
Laconia	233.92



Meredith Cost		
Year	\$/Q	\$/yr.
2009	21.08	84.32
2009 New	18.80	75.20
2010	21.44	85.76
2011	24.13	96.52
2012	26.61	106.44
2013	27.56	110.24

Wolfeboro*	208.00
Tilton-Northfield	0.00
Laconia	80.00

* Includes 5,000 gal. (6.68ccf) usage. per quarter.

DES 2009 Survey - Additional Information of Interest

Question 7 - Rate Structure

<u>Answer</u>	<u>Responses</u>
Declining	7
Constant (Flat)	54
Inclining	25
Fixture Rate	2
Single Fee	8
Other	2
No Response	20

Question 16 - Different Rates for Different Classes of Users

<u>Answer</u>	<u>Responses</u>
Yes	19
No	69
No Response	31

8. Comparisons and Effect on Rate Payers (continued)

Rate Payer Comparison to 2009 Cost

In the transition from a rate structure with seasonal rates, class rates, inclining block rates and different block break points to a system with none of those variations mean all rate payers will not have the same percent increase (and certainly not the same dollar increase).

Across the span of users from those with low consumption to those with high consumption, below are the variations in percentage increase from 2009 to 2013 they will experience:

Water – Residential	42% at low usage; 112% at 15 ccf/q; 29% at high usage.
Water – Non-Residential	42% at low usage; 156% at 90 ccf/q; 73% at high usage.
Sewer – Residential	41% at low usage increasing linearly to 222% at high usage.
Sewer – non-Residential	41% at low usage; 125% at 18 ccf/q; 59% at high usage.

In dollars per quarter increase in cost a similar comparison (2009 to 2013) of median users in 0-10 ccf/q, 11-50 ccf/q and >50 ccf/q is:

Water – Residential	@ 4 ccf/q \$20; @ 19 ccf/q \$60; @ 260 ccf/q \$326.
Water – Non-Residential	@4 ccf/q \$20; @24 ccf/q \$81; @225 ccf/q \$585.
Sewer – Residential	@ 5 ccf/q \$31; @ 23 ccf/q \$104; @ 260 ccf/q \$1026.
Sewer – Non-Residential	@5 ccf/q \$31; @23 ccf/q \$69; @ 260 ccf/q \$571.

Another comparison is in budgeted revenue. From 2009 to 2013, water revenue is budgeted to increase 47% while sewer is budgeted to increase 76%.

9. Alternatives

Every alternative to equal charges for all users at all levels of consumption to benefit one customer merely shifts the burden to a different customer.

The transition to an equal rate system as is being proposed is especially difficult for customers who were paying reduced rates such as commercial users. Sewer rates are currently even more favorable for large users than water rates so the transition for high-usage customers with both water and sewer accounts will be costly.

Residential customers with single meters for large numbers of residential units will benefit greatly from installing more meters, insuring leak-free distribution systems, insulating or heating pipes in winter and tenants who are conscientious about conservation and leak-free fixtures.

If summer conservation measures are desired, a seasonal surcharge is preferred to higher consumption rates. This is a workable alternative to high irrigation consumption charges.

At this time no analysis has been done to determine the impact on specific customers of implementing these recommendations.

10. Ordinance Changes

When final rate structure and rate decisions are made the rate pages of the water and sewer ordinances will be changed.

Additional changes will be required to accomplish these items:

Water Use Ordinance

Sections 505 and 505A – defines how user charges, connection fees and access fees shall be used.

A section may need to be written to require property owners with fire suppression systems to maintain them including clearing snow from hydrants if the town eliminates fire suppression charges.

Sewer Use Ordinance

Section 704 was removed by mistake during the last revision.

Section 901 – cleaning up user charges language.

Section 903 – Same as Sections 505 and 505A of the Water Use ordinance to define how user charges, connection fees and access fees shall be used.

A section needs to be written or edited to require new construction with sewer-only connections to install a water meter for sewer billing purposes. This section may also include provisions to require commercial non-metered sewer users to install a water meter within a reasonable time.

See Item5 in the Appendix for recommended changes to Sections 505 and 505A of the WUO and Sections 704, 901 and 903 in the SUO.

A recommendation has been made to include the Water and Sewer Rate Rules in each of the ordinances.