

FITCHBURG SEWER UTILITY

Fitchburg, Wisconsin

FORECASTED SEWER REVENUE REQUIREMENT,
COST OF SERVICE ANALYSIS
AND RATE DESIGN
Test Year 2018

Prepared as of

February 15, 2018

FITCHBURG SEWER UTILITY

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ACCOUNTANTS' COMPILATION REPORT

Fitchburg Sewer Utility
Fitchburg, Wisconsin

Management is responsible for the accompanying forecasted Schedules 1 through 16 ("Schedules") as identified in the table of contents of the City of Fitchburg Sewer Utility, an enterprise fund of the City of Fitchburg for the years ending December 31, 2017 and 2018 including the related summaries of significant assumptions and accounting policies in accordance with guidelines for the presentation of a forecast established by the American Institute of Certified Public Accountants (AICPA). We have performed a compilation engagement in accordance with Statements on Standards for Accounting and Review Services promulgated by the Accounting and Review Services Committee of the AICPA. We did not examine or review the forecasted Schedules nor were we required to perform any procedures to verify the accuracy or completeness of the information provided by management. Accordingly, we do not express an opinion, a conclusion, nor provide any form of assurance on this forecasted Schedules.

There will usually be differences between the forecasted and actual results because events and circumstances frequently do not occur as expected, and those differences may be material. We have no responsibility to update this report for events and circumstances occurring after the date of this report.

The accompanying supplementary information, identified as historical financial information, for the years ended December 31, 2015 and 2016, and non-financial information, contained in the Schedules is presented for purposes of additional analysis and is not a required part of the forecast. Such information is the responsibility of management. The supplementary information was subject to our compilation engagement. We have not examined or reviewed the supplementary information and do not express an opinion, a conclusion nor provide any assurance on such information.

Baker Tilly Virchow Krause, LLP

Madison, Wisconsin
February 15, 2018

CITY OF FITCHBURG SEWER UTILITY

EXECUTIVE SUMMARY

RESULTS OF THE STUDY – AMOUNT OF INCREASE

The City of Fitchburg sewer utility (utility) forecasted 2018 revenue requirement shows a need to increase rates \$291,000 or 13%.

Besides capital related costs, major contributors to the forecasted increase include additional O&M expenses compared to the last time a full study was done in test year 2010. These additional O&M costs are exclusive of MMSD treatment charges, as the utility's management has continued to adjust rates annually for increases in MMSD costs and rates.

The net income analysis on Schedule 2 demonstrates the adequacy of the proposed rate increase and rate design. Schedule 2 also presented the utility's forecasted 2018 net cash flow after payment of MMSD treatment costs, O&M expenses, and capital additions. The forecasted 2018 rates show an annual cash deficit due to the planned capital related projects, however, the utility has a cash reserve that can be drawn from the cover this shortfall. The forecasted cash reserve on Schedule 2 demonstrates approximately 3 months' worth of operations, which represents an industry best practice minimum reserve.

The utility's last rate adjustment was approved by the City Council and was effective January 1, 2018. This adjustment related to an increased MMSD rates for 2018.

This study follows the "cash" basis of rate-making unlike a water rate study that follows the "utility" basis of rate-making as required by the Public Service Commission of Wisconsin (PSCW). The difference between the "utility" and "cash" basis of rate-making is the "utility" basis includes depreciation expense and a return on the rate base in rates instead of debt principal and interest payments and utility financed capital expenditures under the "cash" basis.

RATE DESIGN

Schedule 8 shows the results of the cost of service study and indicates a need for an increase in both the volume based charges and demand and customer charges. Schedule 12 shows the calculation of the new volume charge and Schedule 13 shows the calculation of the new meter charges by customer class.

Schedule 15 shows the proposed effects on various size customers. An average residential bill would increase by \$6.26/quarter. Schedule 16 shows the proposed effects on an average residential customer compared to neighboring communities.

HISTORY OF PRESENT RATES

Fitchburg Sewer Utility's (utility) rate study, including cost of service and rate design, is based on forecasted results of operations for the year ended December 31, 2018. The sewer cost of service study is an apportionment of the revenue requirement to those sewer related parameters which cause the expense to be incurred. The study proceeds through the identification of cost of parameters, the calculation of unit costs for each parameter and the development of rates which, when applied to the customer count and units treated, will produce the required revenue. The last utility rate study including cost of service and rate design was based on a 2010 test year which was completed by management.

CITY OF FITCHBURG SEWER UTILITY

EXECUTIVE SUMMARY

HISTORY OF PRESENT RATES (cont.)

The following table is a summary of the revenue requirement:

Revenue Requirement	Test Year 2018	Test Year 2010
Treatment charges*	\$ 2,072,000	\$ 2,072,000
Operating and maintenance expense	527,000	415,000
Capital additions	260,000	300,000
Total Revenue Requirement	\$ 2,859,000	\$ 2,787,000

**Rates are adjusted annually for changes in MMSD costs, (treatment charges line item), rates were adjusted in 2017 and 2018 based off yearly estimates provided by MMSD.*

RATE STUDY PROCESS

Adjusting sewer rates follows a process of steps and procedures. The process of adjusting sewer rates can be broken down into the following steps:

1. Forecast revenue requirement (Schedules 1 – 7) using historical information, trend analysis, budgets and other utility management input for a test year 2018 for:
 - a. Operating revenue
 - b. MMSD costs
 - c. O&M expenses and other costs
 - d. Routine capital additions
2. Prepare a cost of service (Schedules 8 – 11) to apportion the revenue requirement to cost components using industry standards and prior cost of service study data to determine the cost to serve customers.
3. Develop proposed rate design (Schedules 12 – 16) using the results of the revenue requirement and cost of service study including bill comparisons and other management objectives.
4. Assemble the report, provide a draft copy of the report for management to review, make any necessary revisions and after approval from the governing body, the report is finalized.
5. Notify customers and place new rates into effect.

CITY OF FITCHBURG SEWER UTILITY

MANAGEMENT INFORMATION AND PROJECT OVERVIEW

PURPOSE AND SCOPE

In order for the City of Fitchburg sewer utility (utility) to operate effectively and on a self-sustaining basis, the utility must develop rates sufficient to meet operating, financing and capital needs.

APPROACH

An interactive approach was followed in completing the study, which included drawing upon input from staff and management of the utility. The steps followed in completing the study include:

- > Obtain historical revenues, expenses, capital improvements and cash flows
- > Develop a model to forecast 2018 revenue requirement
- > Discussions with utility management regarding projects under consideration
- > Review historical growth and forecast growth based on discussions with management
- > Preparation of a formal report outlining the significant assumptions and the forecast results

This collaborative effort has resulted in a meaningful forecast that you can use to guide the financial future of the utility.

RESULTS AND CONCLUSIONS

The results of this study are summarized below. Additional attachments are included in this study to support the forecast and rate design.

FORECASTED 2018 REVENUE REQUIREMENT

The forecasted revenue requirement is based on a forecasted year ending December 31, 2018. Forecasted 2017 and 2018 expenses are based on utility operating and capital budgets, 2016 actual expenses adjusted for inflation and changes as projected by management. Forecasted revenues are based on actual historical sales for the 4 quarters ending September 30, 2017 adjusted for changes projected by management.

The revenue requirement consists of MMSD costs, O&M expenses, non-routine capital additions, connection fee revenue, and principal and interest payments. Schedule 1 presents the forecasted 2018 revenue requirement and requested rate increase. The utility has a forecasted 2018 revenue deficit of \$291,000 before any rate adjustment, and therefore needs to increase rates 13% to provide adequate cash flow to fund MMSD costs, O&M expenses, capital additions.

FORECASTED 2018 COST OF SERVICE STUDY

The cost of service study is an apportionment of the forecasted revenue requirement to the cost components which cause the expense to be incurred. The study of costs by component, the calculation of unit costs for each component, and the development of rates which, when applied to the sewer utility volume and number of billings, will produce the required revenues.

CITY OF FITCHBURG SEWER UTILITY

MANAGEMENT INFORMATION AND PROJECT OVERVIEW

FORECASTED 2018 COST OF SERVICE STUDY (cont.)

This section includes a discussion of the procedures used in the cost of service study. A brief explanation of the various allocations follows:

1. Operation and maintenance expenses, excluding MMSD charges, are allocated to volume, BOD, nitrogen, phosphorus, suspended solids and customer costs on the basis of standard percentages used in typical wastewater collection operations adjusted for specific characteristics of the Fitchburg sewer utility. These allocations are consistent with the last full study completed by management
2. MMSD costs are allocated to volume, BOD, nitrogen, phosphorus, suspended solids and customer costs based on forecasted 2018 MMSD billings provided by MMSD. Surcharges to high strength customers are not included in this allocation as these costs are billed directly to the customers at MMSD's rates.
3. Routine capital additions are allocated to volume and customer costs based on the capital asset accounts and related depreciation. The allocations used are consistent with the last full study completed by management and updated for current conditions.
4. Other revenues are allocated based on the weighted average of all other costs.

Currently the utility does not have replacement funding requirements, since all treatment equipment is owned by MMSD.

RATE DESIGN

The objective of the rate design is to generate the revenue needed through user rates per the revenue requirement and cost of service study. We have provided for your review proposed rate designs and will provide additional scenarios if requested. The proposed rates result in an overall increase in revenue using a forecasted 2018 test year as shown on the Schedule 12 – volume charge and Schedule 13 – meter charges. These proposed rates are based on current rates, the cost of service results and a 13% rate increase.

Volume rates are based on expenses allocated to volume, biochemical oxygen demand, nitrogen, phosphorus and suspended solids while fixed charges are based on customer and demand related costs.

CITY OF FITCHBURG SEWER UTILITY

SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES AND ASSUMPTIONS

NATURE OF FORECAST

This financial forecast presents, to the best of management's knowledge and belief, the utility's expected results of operations for the forecast periods. Accordingly, the forecast reflects its judgment as of February 15, 2018, the date of this forecast, of the expected conditions and its expected course of action. The assumptions disclosed herein are those that management believes are significant to the forecast and are not all-inclusive. There will usually be differences between the forecasted and actual results, because events and circumstances frequently do not occur as expected, and those differences may be material.

NATURE OF OPERATIONS

The City of Fitchburg sewer utility is a separate enterprise fund of the City of Fitchburg. The utility accounts for the cost of sewer operations and is managed by the City Council. The utility provides sewer service to properties within the City of Fitchburg and its rates are subject to approval from the City Council. MMSD charges the utility fees based on the amount and strength of wastewater that is treated at their plant, as the utility does not treat the wastewater discharged into the system.

SIGNIFICANT ACCOUNTING POLICIES

The utility's annual financial statements are prepared on the accrual basis of accounting. Accordingly, revenues are recorded when services are provided and expenses are recorded when costs are incurred. Other significant accounting policies are explained in the utility's annual financial statements.

This forecast deviates from the accrual basis of accounting in the following ways:

1. Forecasted expenses include normalized costs for rate-making purposes.
 2. The revenue requirement includes debt service and capital additions even though these items are not recorded as expenses on an accrual basis. Conversely, the revenue requirement does not include depreciation expense.
-

REVENUE RECOGNITION

Sewer revenues are recorded for domestic service rendered generally based on water meter readings, with billings made to customers quarterly. The utility does accrue unbilled revenue. High strength surcharge amounts are provided by MMSD.

CITY OF FITCHBURG SEWER UTILITY

SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES AND ASSUMPTIONS

OPERATING AND OTHER REVENUE

METERED SALES

Forecasted 2017 and 2018 domestic metered sales are based on the number of units sold and customers for the 4 quarters ending September 30, 2017 and management's growth assumptions. Forecasted 2017 and 2018 high strength sales are based on units sold for the 4 quarters ending September 30, 2017, management's assumption for changes in usage, and MMSD's 2017 and 2018 rates, respectively.

OTHER REVENUE AND INVESTMENT INCOME

Forecasted other revenue and investment income are based on the utility's budget and historical revenue.

OPERATING EXPENSES

Historical operation and maintenance expenses are reported on the accrual basis. Forecasted 2017 and 2018 expenses are generally reported on the accrual basis with the exception of certain non-recurring major expenses which are normalized for rate-making purposes.

Operation and maintenance expenses are forecasted based on the following:

1. Historical trends from 2015 through September 30, 2017.
2. Management prepared budgets and expectations.
3. Specific knowledge of expenses the utility will incur.

MMSD Treatment Costs

MMSD treatment costs for the 4 quarters ending September 30, 2017, forecasted 2017 and forecasted 2018 are shown on Schedule 7. MMSD treatment costs are based on the units billed for the 4 quarters ending September 30, 2017 adjusted for expected change in units based on historical trends and actual 2017 and 2018 MMSD rates. Current high strength customers are charged directly at MMSD's high strength rates.

PLANT

Forecasted 2017 and 2018 capital additions are based on discussions with Utility management.

Additions to and replacements of utility plant are recorded at original cost, which includes material, labor, overhead, and an allowance for the cost of funds used during construction when significant. The cost of renewals and betterments relating to retirement units is added to plant accounts. The cost of property replaced, retired or otherwise disposed of, is deducted from plant accounts and, generally, together with removal costs less salvage, is charged to accumulated depreciation.

CITY OF FITCHBURG SEWER UTILITY

SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES AND ASSUMPTIONS

DEPRECIATION

The revenue requirement reported on Schedule 1 does not include depreciation expense, as reported in the utility's audited financial statements. The revenue requirement does, however, include funds to generate cash flow for routine capital additions. For purposes of this rate study, \$260,000 has been included in the utility's revenue requirement for forecasted 2018 to account for future capital replacements and additions projects planned by the utility. It should be noted that actual costs can be volatile over the years depending on the budgeted capital projects scheduled for each year.

SCHEDULES

FITCHBURG SEWER UTILITY
 Forecasted Revenue Requirement Summary
 Actual 2016 - Forecasted 2018

Schedule 1

	Forecasted			
	Actual	2017	2018	
	2016		Current Rates	Proposed Rates
SOURCES OF FUNDS				
Metered Sales				
Residential	\$ 1,214,530	\$ 1,204,500	\$ 1,271,500	\$ 1,403,400
Multi-Family Residential	597,238	553,200	621,000	720,600
Commercial	168,494	257,300	272,300	312,300
Industrial - Domestic Strength	116,934	92,200	103,900	121,000
Public authority	<u>10,207</u>	<u>10,500</u>	<u>11,300</u>	<u>12,600</u>
Subtotal - Metered Sales	2,107,403	2,117,700	2,280,000	2,569,900
High strength customer surcharge (A)	<u>237,471</u>	<u>238,000</u>	<u>259,900</u>	<u>259,900</u>
Total Sales	2,344,874	2,355,700	2,539,900	2,829,800
Other Revenue				
Forfeited discounts	4,785	9,600	10,400	11,600
Misc revenues	14,544	3,200	6,700	6,700
Unmetered Sales	<u>11,678</u>	<u>11,700</u>	<u>11,700</u>	<u>11,700</u>
Total Other Revenue	31,007	24,500	28,800	30,000
Total Sources of Funds	2,375,881	2,380,200	2,568,700	2,859,800
REVENUE REQUIREMENT				
Operation and maintenance expenses, taxes	446,486	492,268	527,335	527,335
MMSD service fee (domestic)	1,674,625	1,716,822	1,812,500	1,812,500
MMSD service fee (high strength) (A)	237,471	238,000	259,900	259,900
Routine capital additions	<u>220,158</u>	<u>241,870</u>	<u>260,000</u>	<u>260,000</u>
Total Revenue Requirement	2,578,740	2,688,960	2,859,735	2,859,735
Excess Revenues (Deficiency)	<u>\$ (202,859)</u>	<u>\$ (308,800)</u>	<u>\$ (291,000)</u>	<u>\$ 100</u>
Percent Increase Needed			13%	

(A) - The utility does not bill these surcharges directly, but rather passes through the MMSD charges directly to the respective customers.

FITCHBURG SEWER UTILITY
 Forecasted Net Income and Cash Flow Analysis
 Forecasted 2018

Schedule 2

	Forecasted 2018		Schedule
	Current Rates	Proposed Rates	
Forecasted Net Income Analysis			
Operating Revenues			
Metered sales	\$ 2,539,900	\$ 2,829,800	1
Other revenue	22,100	23,300	1
Total Operating Revenues	2,562,000	2,853,100	
Operating Expenses			
Operation and maintenance	527,335	527,335	6
MMSD service fee (domestic)	1,812,500	1,812,500	7
MMSD service fee (high strength)	259,900	259,900	7
Depreciation	255,225	255,225	11
Total Operating Expenses	2,854,960	2,854,960	
Operating Income (Loss)	(292,960)	(1,860)	
Nonoperating Revenue (Expenses)			
Other nonoperating revenue	6,700	6,700	1
Total Nonoperating Revenue	6,700	6,700	
FORECASTED NET INCOME	\$ (286,260)	\$ 4,840	

Forecasted Cash Flow Analysis			
Forecasted net income	\$ (286,260)	\$ 4,840	Above
Add back depreciation	255,225	255,225	Above
Less routine and nonroutine capital additions	(1,027,250)	(1,027,250)	10b
FORECASTED CASH FLOW	\$ (1,058,285)	\$ (767,185)	
Estimated cash on hand	\$ 1,458,000	\$ 1,458,000	
Remaining cash reserve	\$ 399,715	\$ 690,815	

FITCHBURG SEWER UTILITY
 Consumer Analysis - Current Rates - Total
 Actual 4th Quarter 2016 - 3rd Quarter 2017

	Rates	Residential		Multi-Family Residential		Commercial		Industrial		Public Authority		Total	
		Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue
2016 Volume Charge	2.00 /1,000 gals	60,226	\$ 120,452	63,283	\$ 126,566	24,310	\$ 48,620	10,020	\$ 20,040	745	\$ 1,490	158,584	\$ 317,168
2017 Volume Charge	1.89 /1,000 gals	<u>185,395</u>	<u>350,397</u>	<u>182,500</u>	<u>344,925</u>	<u>74,348</u>	<u>140,518</u>	<u>32,963</u>	62,300	<u>1,939</u>	<u>3,665</u>	<u>477,145</u>	<u>901,804</u>
Total		245,621	470,849	245,783	471,491	98,658	189,138	42,983		2,684	5,155	635,729	\$ 1,471,989.02
2016 Volume (MG)	685.47 /MG							5	3,660				
2017 Volume (MG)	593.15 /MG							15	9,030				
2016 CBOD5 (lbs)	0.166 /lbs							166,916	27,678				
2017 CBOD5 (lbs)	0.149 /lbs							499,779	74,317				
2016 SS (lbs)	0.237 /lbs							108,641	25,781				
2017 SS (lbs)	0.241 /lbs							364,053	87,733				
2016 TKN (lbs)	0.364 /lbs							2,457	894				
2017 TKN (lbs)	0.373 /lbs							8,193	3,054				
2016 Total P (lbs)	3.549 /lbs							1,390	4,933				
2017 Total P (lbs)	3.854 /lbs							4,135	15,937				
									\$ 335,357				

Meter Charge	Rates	Meters	Billings	Meters	Billings	Meters	Billings	Meters	Billings	Meters	Billings	Meters	Billings	Meters	Billings				
2016 - 5/8" & 3/4"	32.70 /Qtr	5,150	5,150	168,405	15	15	491	180	180	5,886	4	4	131	3	3	98	5,352	5,352	175,010
2017 - 5/8" & 3/4"	35.60 /Qtr	5,174	15,522	552,583	18	54	1,922	177	531	18,904	4	12	427	3	9	320	5,376	16,128	574,157
2016 - 1"	41.20 /Qtr	18	18	742	55	55	2,266	86	86	3,543	2	2	82	4	4	165	165	165	6,798
2017 - 1"	44.80 /Qtr	18	54	2,419	56	168	7,526	85	255	11,424	2	6	269	4	12	538	165	495	22,176
2016 - 1-1/2"	62.90 /Qtr	1	1	63	89	89	5,598	38	38	2,390	9	9	566	1	1	63	138	138	8,680
2017 - 1-1/2"	68.30 /Qtr	1	3	205	90	270	18,441	38	114	7,786	9	27	1,844	3	9	615	141	423	28,891
2016 - 2"	88.80 /Qtr	-	-	-	141	141	12,521	39	39	3,463	8	8	710	8	8	710	196	196	17,405
2017 - 2"	96.40 /Qtr	-	-	-	130	390	37,596	40	120	11,568	9	27	2,603	9	27	2,603	188	564	54,370
2016 - 3"	148.80 /Qtr	-	-	-	2	2	298	6	6	893	2	2	298	-	-	-	10	10	1,488
2017 - 3"	161.40 /Qtr	-	-	-	2	6	968	7	21	3,389	2	6	968	-	-	-	11	33	5,326
2016 - 4"	234.50 /Qtr	-	-	-	-	-	-	-	-	-	1	1	235	-	-	-	1	1	235
2017 - 4"	254.40 /Qtr	-	-	-	-	-	-	-	-	-	1	3	763	-	-	-	1	3	763
2016 - 6"	449.20 /Qtr	-	-	-	-	-	-	-	-	-	1	1	449	-	-	-	1	1	449
2017 - 6"	487.10 /Qtr	-	-	-	-	-	-	-	-	-	1	3	1,461	-	-	-	1	3	1,461
Sub-total		<u>5,181</u>	<u>20,748</u>	<u>724,417</u>	<u>299</u>	<u>1,190</u>	<u>87,627</u>	<u>348</u>	<u>1,390</u>	<u>69,247</u>	<u>28</u>	<u>111</u>	<u>10,807</u>	<u>18</u>	<u>73</u>	<u>5,112</u>	<u>11,746</u>	<u>23,512</u>	<u>897,209</u>
Total Computed Revenue				1,195,265			559,118			258,384			346,164			10,266			2,369,198
Actual Revenue Billed				<u>1,169,051</u>			<u>534,279</u>			<u>259,404</u>			<u>349,711</u>			<u>10,350</u>			<u>2,322,795</u>
Difference				\$ (26,215)			\$ (24,839)			\$ 1,020			\$ 3,547			\$ 83			\$ (46,403)
% Difference				-2%			-4%			0%			1%			1%			-2%

Please refer to Accountants' Report, Summary of Significant Accounting Policies and Significant Assumptions.

FITCHBURG SEWER UTILITY
 Consumer Analysis - Current Rates - Total
 Forecasted 2017

	Rates	Residential		Multi-Family Residential		Commercial		Industrial		Public Authority		Total	
		Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue
Volume Charge	\$ 1.89 /1,000 gals	<u>245,600</u>	\$ 464,184	<u>245,800</u>	\$ 464,562	<u>98,700</u>	\$ 186,543	<u>43,000</u>	\$ 81,270	<u>2,700</u>	\$ 5,103	<u>635,800</u>	\$ 1,439,435
Volume (MG)	593.15 /MG							19	11,171.45				
CBOD5 (lbs)	0.1487 /lbs							618,238	91,931.99				
SS (lbs)	0.24099 /lbs							458,448	110,481.38				
TKN (lbs)	0.37271 /lbs							10,133	3,776.67				
Total P (lbs)	3.85 /lbs							5,296	<u>20,411.31</u>				
									\$ 319,043				

Meter Charge	Rates	Residential		Multi-Family Residential		Commercial		Industrial		Public Authority		Total							
		Meters	Billings	Meters	Billings	Meters	Billings	Meters	Billings	Meters	Billings	Meters	Billings						
5/8" & 3/4"	\$ 35.60 /Qtr	5,174	20,696	736,778	18	72	2,563	177	708	25,205	4	16	570	3	12	427	5,376	21,504	765,542
1"	44.80 /Qtr	18	72	3,226	56	224	10,035	85	340	15,232	2	8	358	4	16	717	165	660	29,568
1-1/2"	68.30 /Qtr	1	4	273	90	360	24,588	38	152	10,382	9	36	2,459	3	12	820	141	564	38,521
2"	96.40 /Qtr	-	-	-	130	520	50,128	40	160	15,424	9	36	3,470	9	36	3,470	188	752	72,493
3"	161.40 /Qtr	-	-	-	2	8	1,291	7	28	4,519	2	8	1,291	-	-	-	11	44	7,102
4"	254.40 /Qtr	-	-	-	-	-	-	-	-	-	1	4	1,018	-	-	-	1	4	1,018
6"	487.10 /Qtr	-	-	-	-	-	-	-	-	-	1	4	1,948	-	-	-	1	4	1,948
Sub-total		<u>5,193</u>	<u>20,772</u>	<u>740,276</u>	<u>296</u>	<u>1,184</u>	<u>88,606</u>	<u>347</u>	<u>112</u>	<u>70,762</u>	<u>28</u>	<u>112</u>	<u>11,114</u>	<u>19</u>	<u>76</u>	<u>5,434</u>	<u>5,883</u>	<u>23,532</u>	<u>916,192</u>
Total Computed Revenue			\$ <u>1,204,460</u>			\$ <u>553,168</u>		\$ <u>257,305</u>		\$ <u>330,157</u>		\$ <u>10,537</u>						\$ <u>2,355,627</u>	

Please refer to Accountants' Report, Summary of Significant Accounting Policies and Significant Assumptions.

FITCHBURG SEWER UTILITY

Schedule 4a

Sales Forecast

Actual 2015 -Forecasted 2018

	<u>2015</u>	<u>2016</u>	<u>Forecasted 2017</u>	<u>Forecasted 2018</u>	<u>Change from 2017 to 2018</u>
<u>Residential</u>					
Volume (000 Gallons)	257,292	252,261	245,600	249,300	3,700
Number of Customers	5,135	5,150	5,193	5,265	72
Increase in number of customers		15	12	72	
Average Volume (000 Gallons)	50	49	47	47	
<u>Multi-Family Residential</u>					
Volume (000 Gallons)	222,697	238,039	245,800	258,800	13,000
Number of Customers	281	300	296	306	10
Increase in number of customers		19	(3)	10	
Average Volume (000 Gallons)	793	793	830	846	
<u>Commercial</u>					
Volume (000 Gallons)	112,349	100,935	98,700	98,500	(200)
Number of Customers	352	349	347	347	0
Increase in number of customers		(3)	(1)	0	
Average Volume (000 Gallons)	319	289	284	284	
<u>Industrial</u>					
Volume (000 Gallons)	42,928	44,464	43,000	45,500	2,500
Number of Customers	26	26	28	28	0
Increase in number of customers		0	1	0	
Average Volume (000 Gallons)	1,651	1,710	1,536	1,549	
<u>Public Authority</u>					
Volume (000 Gallons)	2,568	2,794	2,700	2,800	100
Number of Customers	16	16	19	19	0
Increase in number of customers		0	2	0	
Average Volume (000 Gallons)	161	175	142	148	
<u>Total</u>					
Volume (000 Gallons)	637,834	638,493	635,800	654,900	19,100
Number of Customers	5,810	5,841	5,883	5,965	82
Increase in number of customers		31	42	82	
Average Volume (000 Gallons)	110	109	108	110	

Please refer to Accountants' Report, Summary of Significant Accounting Policies and Significant Assumptions.

FITCHBURG SEWER UTILITY
 Consumer Analysis - Current Rates - Total
 Forecasted 2018

	Rates	Residential		Multi-Family Residential		Commercial		Industrial		Public Authority		Total							
		Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue						
Volume Charge	\$ 2.03 /1,000 gals	249,300	\$ 506,079	258,800	\$ 525,364	98,500	\$ 199,955	45,500	\$ 92,365	2,800	\$ 5,684	654,900	\$ 1,589,321						
Volume (MG)	648.61 /MG							21	13,318										
CBOD5 (lbs)	0.15573 /lbs							672,601	104,744										
SS (lbs)	0.25196 /lbs							451,600	113,785										
TKN (lbs)	0.38193 /lbs							11,353	4,336										
Total P (lbs)	4.25832 /lbs							5,563	23,691										
									\$ 352,239										
Meter Charge	Rates	Meters	Billings		Meters	Billings		Meters	Billings		Meters	Billings		Meters	Billings		Meters	Billings	
5/8" & 3/4"	\$ 36.30 /Qtr	5,247	20,987	761,820	17	68	2,452	178	712	25,844	4	16	591	3	13	473	5,449	21,796	791,180
1"	45.90 /Qtr	18	72	3,305	57	227	10,428	85	341	15,653	2	8	374	4	17	797	166	666	30,557
1-1/2"	70.60 /Qtr	1	4	282	92	366	25,867	38	152	10,700	9	37	2,588	2	9	613	142	567	40,050
2"	100.10 /Qtr	-	-	-	139	555	55,524	39	158	15,770	9	35	3,465	9	37	3,695	196	784	78,455
3"	168.50 /Qtr	-	-	-	2	8	1,400	6	26	4,368	2	8	1,373	-	-	-	11	42	7,141
4"	266.20 /Qtr	-	-	-	-	-	-	-	-	-	1	4	1,084	-	-	-	1	4	1,084
6"	510.80 /Qtr	-	-	-	-	-	-	-	-	-	1	4	2,080	-	-	-	1	4	2,080
Sub-total		5,266	21,063	765,407	306	1,224	95,671	347	1,388	72,336	28	112	11,555	19	76	5,579	5,966	23,863	950,548
Total Computed Revenue			\$ 1,271,486			\$ 621,035		\$ 272,291		\$ 363,794		\$ 11,263				\$ 2,539,868			

Please refer to Accountants' Report, Summary of Significant Accounting Policies and Significant Assumptions.

FITCHBURG SEWER UTILITY

Schedule 6

Detailed Operation and Maintenance Expenses
Actual 2015 - Forecasted 2018

	Actual		Forecasted	Forecasted
	2015	2016	2017	2018
Operation and Maintenance Expenses				
Operating Expenses				
MMSD treatment charges (5827)	\$ 1,630,054	\$ 1,912,096	\$ 1,954,822	\$ 2,072,384
Transportation expense (5828)	10,215	8,134	10,910	11,690
Joint metering (5830)	105,283	84,735	90,000	90,000
Total Operating Expenses	1,745,552	2,004,965	2,055,732	2,174,074
Maintenance Expenses				
Maintenance of sewerage collection system (5831)	34,514	35,699	42,029	67,033
Maintenance of general plant (5834)	3,794	1,556	5,549	5,694
Total Maintenance Expenses	38,308	37,255	47,578	72,727
Customer Account Expense				
Billing, collecting, accounting (5903)	47,166	55,149	68,609	66,891
PSN fees (5903-290)	13,369	13,129	17,000	17,000
Meter reading expense (5902)	2,808	1,892	2,150	1,552
Total Customer Account Expenses	63,343	70,170	87,759	85,443
Administrative & General Expenses				
Admin. Salaries (5920)	70,186	70,235	122,898	119,530
Office supplies & expenses (5921-310)	6,029	4,236	6,000	5,000
Computer related expenses (5921)	4,424	17,883	23,215	23,670
Outside services (5923)	9,575	7,767	12,145	12,356
Insurance expense (5924 & 5925)	16,043	22,350	16,363	15,451
Employee pension & benefits (5926)	43,051	64,553	2,050	18,236
Misc. general expenses (5930)	34,835	29,016	41,850	41,732
Rents (5930-922)	20,000	20,000	20,000	20,000
Taxes (5408)	11,182	10,152	11,500	11,500
Total Administrative & General Expenses	215,325	246,192	256,021	267,475
Total Sewer Utility O&M Expense	2,062,528	2,358,582	2,447,090	2,599,719
Less:				
MMSD treatment charges	(1,630,054)	(1,912,096)	(1,954,822)	(2,072,384)
Total	\$ 432,474	\$ 446,486	\$ 492,268	\$ 527,335

Note: Decrease in budgeted pensions and benefits due to new account structure in which the benefits follow the labor starting in 2017.

Parameter	Actual 2016					Charges				
	Billed Units				Total	Charges				Total
	1st Quarter 2016	2nd Quarter 2016	3rd Quarter 2016	4th Quarter 2016		1st Quarter 2016	2nd Quarter 2016	3rd Quarter 2016	4th Quarter 2016	
Total										
Volume (MG)	167.82	173.34	184.86	178.58	704.61	\$ 115,035.96	\$ 118,822.54	\$ 126,717.44	\$ 122,414.07	\$ 482,990.01
CBOD5 (lbs)	480,419.00	534,383.00	527,192.00	535,245.00	2,077,239.00	79,663.04	88,611.44	87,419.05	88,754.26	344,447.79
SS (lbs)	338,172.00	401,391.00	415,031.00	416,033.00	1,570,627.00	80,248.26	95,250.04	98,486.86	98,724.67	372,709.83
TKN (lbs)	68,648.00	68,650.00	71,368.00	70,032.00	278,698.00	24,977.73	24,978.16	25,967.22	25,481.11	101,404.22
Total P (lbs)	9,620.00	10,359.00	10,774.00	10,206.00	40,959.00	34,141.51	36,766.96	38,240.02	36,224.42	145,372.91
Equivalent Meters	8,286.37	8,316.70	8,347.20	8,371.20	33,321.47	62,541.35	62,770.29	63,000.49	63,181.63	251,493.76
Actual Customers	6,011.33	6,026.00	6,037.67	6,048.67	24,123.67	47,444.45	47,560.21	47,652.28	47,739.10	190,396.04
Adjustment	-	-	-	-	-	-	-	-	-	-
Total						\$ 444,052.30	\$ 474,759.64	\$ 487,483.36	\$ 482,519.26	\$ 1,888,814.56
High Strength Customer										
Volume (MG)	3.65	5.63	6.17	5.34	20.78	\$ 2,502.35	\$ 3,856.38	\$ 4,226.69	\$ 3,662.97	\$ 14,248.39
CBOD5 (lbs)	145,618.00	170,643.00	165,480.00	166,916.00	648,657.00	24,146.41	28,296.06	27,439.96	27,677.94	107,560.37
SS (lbs)	68,174.00	107,527.00	117,171.00	108,641.00	401,513.00	16,177.58	25,516.04	27,804.73	25,780.50	95,278.85
TKN (lbs)	2,160.00	2,573.00	2,438.00	2,457.00	9,628.00	785.84	936.10	887.26	894.17	3,503.37
Total P (lbs)	822.00	1,040.00	1,504.00	1,390.00	4,756.00	2,916.79	3,691.61	5,337.04	4,934.11	16,879.55
Total						\$ 46,528.97	\$ 62,296.19	\$ 65,695.68	\$ 62,949.69	\$ 237,470.53
Domestic Strength										
Volume (MG)	164.17	167.72	178.70	173.24	683.83	\$ 112,533.61	\$ 114,966.16	\$ 122,490.75	\$ 118,751.10	\$ 468,741.62
CBOD5 (lbs)	334,801.00	363,740.00	361,712.00	368,329.00	1,428,582.00	55,516.63	60,315.38	59,979.09	61,076.32	236,887.42
SS (lbs)	269,998.00	293,864.00	297,860.00	307,392.00	1,169,114.00	64,070.68	69,734.00	70,682.13	72,944.17	277,430.98
TKN (lbs)	66,488.00	66,077.00	68,930.00	67,575.00	269,070.00	24,191.89	24,042.06	25,079.96	24,586.94	97,900.85
Total P (lbs)	8,798.00	9,319.00	9,270.00	8,816.00	36,203.00	31,224.72	33,075.35	32,902.98	31,290.31	128,493.36
Equivalent Meters	8,286.37	8,316.70	8,347.20	8,371.20	33,321.47	62,541.35	62,770.29	63,000.49	63,181.63	251,493.76
Actual Customers	6,011.33	6,026.00	6,037.67	6,048.67	24,123.67	47,444.45	47,560.21	47,652.28	47,739.10	190,396.04
Adjustment	-	-	-	-	-	-	-	-	-	-
Total						\$ 397,523.33	\$ 412,463.45	\$ 421,787.68	\$ 419,569.57	\$ 1,651,344.03
	4 Quarters Ending 9/30/17									
Parameter	Billed Units				Total	Charges				Total
	4th Quarter 2016	1st Quarter 2017	2nd Quarter 2017	3rd Quarter 2017		4th Quarter 2016	1st Quarter 2017	2nd Quarter 2017	3rd Quarter 2017	
Total										
Volume (MG)	178.58	179.93	176.04	178.28	712.83	\$ 122,414.07	\$ 106,726.33	\$ 104,416.27	\$ 105,744.87	\$ 439,301.54
CBOD5 (lbs)	535,245.00	601,899.00	585,800.00	520,198.00	2,243,142.00	88,754.26	89,502.39	87,108.42	77,353.46	342,718.53
SS (lbs)	416,033.00	429,915.00	468,277.00	443,211.00	1,757,436.00	98,724.67	103,605.30	112,850.06	106,809.54	421,989.57
TKN (lbs)	70,032.00	76,395.00	75,583.00	74,165.00	296,175.00	25,481.11	28,473.19	28,170.67	27,642.01	109,766.98
Total P (lbs)	10,206.00	10,405.00	10,347.00	10,727.00	41,685.00	36,224.42	40,101.19	39,876.49	41,341.79	157,543.89
Equivalent Meters	8,371.20	8,402.53	8,441.53	8,471.20	33,686.46	63,181.63	69,488.95	69,811.48	70,056.82	272,538.88
Actual Customers	6,048.67	6,060.67	6,078.33	6,087.67	24,275.34	47,739.10	58,758.16	58,929.44	59,019.93	224,446.63
Adjustment	-	-	-	-	-	-	-	-	-	-
Total						\$ 482,519.26	\$ 496,655.51	\$ 501,162.83	\$ 487,968.42	\$ 1,968,306.02
High Strength Customer										
Volume (MG)	5.34	5.42	4.74	5.06	20.56	\$ 3,662.97	\$ 3,212.94	\$ 2,813.10	\$ 3,004.01	\$ 12,693.02
CBOD5 (lbs)	166,916.00	189,360.00	169,861.00	140,558.00	666,695.00	27,677.94	28,157.83	25,258.27	20,900.91	101,994.95
SS (lbs)	108,641.00	119,828.00	131,165.00	113,060.00	472,694.00	25,780.50	28,877.31	31,609.38	27,246.26	113,513.45
TKN (lbs)	2,457.00	3,072.00	2,722.00	2,399.00	10,650.00	894.17	1,145.06	1,014.31	893.92	3,947.46
Total P (lbs)	1,390.00	1,296.00	1,381.00	1,458.00	5,525.00	4,934.11	4,996.30	5,321.17	5,621.47	20,873.05
Total						\$ 62,949.69	\$ 66,389.44	\$ 66,016.23	\$ 57,666.57	\$ 253,021.93
Domestic Strength										
Volume (MG)	173.24	174.51	171.29	173.21	692.27	\$ 118,751.10	\$ 103,513.39	\$ 101,603.17	\$ 102,740.86	\$ 426,608.52
CBOD5 (lbs)	368,329.00	412,539.00	415,939.00	379,640.00	1,576,447.00	61,076.32	61,344.56	61,850.15	56,452.55	240,723.58
SS (lbs)	307,392.00	310,087.00	337,112.00	330,151.00	1,284,742.00	72,944.17	74,727.99	81,240.68	79,563.28	308,476.12
TKN (lbs)	67,575.00	73,323.00	72,861.00	71,766.00	285,525.00	24,586.94	27,328.13	27,156.36	26,748.09	105,819.52
Total P (lbs)	8,816.00	9,109.00	8,966.00	9,269.00	36,160.00	31,290.31	35,104.89	34,555.32	35,720.32	136,670.84
Equivalent Meters	8,371.20	8,402.53	8,441.53	8,471.20	33,686.46	63,181.63	69,488.95	69,811.48	70,056.82	272,538.88
Actual Customers	6,048.67	6,060.67	6,078.33	6,087.67	24,275.34	47,739.10	58,758.16	58,929.44	59,019.93	224,446.63
Adjustment	-	-	-	-	-	-	-	-	-	-
Total						\$ 419,569.57	\$ 430,266.07	\$ 435,146.60	\$ 430,301.85	\$ 1,715,284.09

Actual 2017

Schedule 7 (cont.)

	Billed Units						Total
	Actual				Rate		
	1st Quarter 2017	2nd Quarter 2017	3rd Quarter 2017	4th Quarter 2017	All Quarters 2017	Total	
Total							
Volume (MG)	179.93	176.04	178.28	170.70	704.95	\$ 593.15000	\$ 418,139.49
CBOD5 (lbs)	601,899.00	585,800.00	520,198.00	490,426.00	2,198,323.00	0.14870	326,890.63
SS (lbs)	429,915.00	468,277.00	443,211.00	414,499.00	1,755,902.00	0.24099	423,154.82
TKN (lbs)	76,395.00	75,583.00	74,165.00	72,227.00	298,370.00	0.37271	111,205.48
Total P (lbs)	10,405.00	10,347.00	10,727.00	10,052.00	41,531.00	3.85410	160,064.63
Equivalent Meters	8,402.53	8,441.53	8,471.20	8,485.20	33,800.46	8.27000	279,529.80
Actual Customers	6,060.67	6,078.33	6,087.67	6,099.00	24,325.67	9.69500	235,837.37
Adjustment	-	-	-	-	-	-	-
Total							<u>\$ 1,954,822.23</u>
High Strength Customer							
Volume (MG)	5.42	4.74	5.06	3.61	18.83	\$ 593.15000	\$ 11,171.45
CBOD5 (lbs)	189,360.00	169,861.00	140,558.00	118,459.00	618,238.00	0.14870	91,931.99
SS (lbs)	119,828.00	131,165.00	113,060.00	94,395.00	458,448.00	0.24099	110,481.38
TKN (lbs)	3,072.00	2,722.00	2,399.00	1,940.00	10,133.00	0.37271	3,776.67
Total P (lbs)	1,296.00	1,381.00	1,458.00	1,161.00	5,296.00	3.85410	20,411.31
Total							<u>\$ 237,772.80</u>
Domestic Strength							
Volume (MG)	174.51	171.29	173.21	167.09	686.11		406,968.04
CBOD5 (lbs)	412,539.00	415,939.00	379,640.00	371,967.00	1,580,085.00		234,958.64
SS (lbs)	310,087.00	337,112.00	330,151.00	320,104.00	1,297,454.00		312,673.44
TKN (lbs)	73,323.00	72,861.00	71,766.00	70,287.00	288,237.00		107,428.81
Total P (lbs)	9,109.00	8,966.00	9,269.00	8,891.00	36,235.00		139,653.31
Equivalent Meters	8,402.53	8,441.53	8,471.20	8,485.20	33,800.46		279,529.80
Actual Customers	6,060.67	6,078.33	6,087.67	6,099.00	24,325.67		235,837.37
Adjustment	-	-	-	-	-		-
Total							<u>\$ 1,717,049.42</u>

Forecasted 2018

Parameter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total Billed Units	Forecasted	
	2018	2018	2018	2018		MMSD Rate	Forecasted Cost
Total							
Volume (MG)	177.94	177.94	177.94	177.94	711.75	\$ 648.61000	\$ 461,645.00
CBOD5 (lbs)	565,753.23	565,753.23	565,753.23	565,753.23	2,263,012.91	0.15573	352,419.00
SS (lbs)	419,752.14	419,752.14	419,752.14	419,752.14	1,679,008.57	0.25196	423,043.00
TKN (lbs)	78,930.04	78,930.04	78,930.04	78,930.04	315,720.16	0.38193	120,583.00
Total P (lbs)	10,493.75	10,493.75	10,493.75	10,493.75	41,975.00	4.25832	178,743.00
Equivalent Meters	8,565.04	8,565.04	8,565.04	8,565.04	34,260.15	8.74500	299,605.00
Actual Customers	6,129.30	6,129.30	6,129.30	6,129.30	24,517.22	9.64000	236,346.00
Total							<u>\$ 2,072,384.00</u>
High Strength Customer							
Volume (MG)	5.13	5.13	5.13	5.13	20.53	\$ 648.61000	\$ 13,317.73
CBOD5 (lbs)	168,150.23	168,150.23	168,150.23	168,150.23	672,600.93	0.15573	104,744.14
SS (lbs)	112,899.88	112,899.88	112,899.88	112,899.88	451,599.53	0.25196	113,785.02
TKN (lbs)	2,838.20	2,838.20	2,838.20	2,838.20	11,352.81	0.38193	4,335.98
Total P (lbs)	1,390.86	1,390.86	1,390.86	1,390.86	5,563.44	4.25832	23,690.90
Total							<u>\$ 259,873.77</u>
Domestic Strength							
Volume (MG)	172.80	172.80	172.80	172.80	691.21	\$ 648.61000	448,327.27
CBOD5 (lbs)	397,602.99	397,602.99	397,602.99	397,602.99	1,590,411.98	0.15573	247,674.86
SS (lbs)	306,852.26	306,852.26	306,852.26	306,852.26	1,227,409.04	0.25196	309,257.98
TKN (lbs)	76,091.84	76,091.84	76,091.84	76,091.84	304,367.34	0.38193	116,247.02
Total P (lbs)	9,102.89	9,102.89	9,102.89	9,102.89	36,411.57	4.25832	155,052.10
Equivalent Meters	8,565.04	8,565.04	8,565.04	8,565.04	34,260.15	8.74500	299,605.00
Actual Customers	6,129.30	6,129.30	6,129.30	6,129.30	24,517.22	9.64000	236,346.00
Total							<u>\$ 1,812,510.23</u>

Please refer to Accountants' Report, Summary of Significant Accounting Policies and Significant Assumptions.

FITCHBURG SEWER UTILITY

Summary of Cost of Service Study
Forecasted 2018

Allocation Basis	Forecasted 2018 Costs	Allocations						Customer Costs	
		Volume	BOD	SS	TKN	PHOS	Demand		
Operation and maintenance expenses	Detailed schedule	\$ 527,300	\$ 210,300	\$ -	\$ 7,600	\$ -	\$ -	\$ 36,700	\$ 272,700
MMSD domestic fees	Detailed schedule	1,812,510	404,210	308,100	369,800	105,100	155,900	262,800	206,600
MMSD high strength (A)	Detailed schedule	259,874	13,300	104,700	113,874	4,300	23,700	-	-
Routine capital additions	Capital assets/depreciation	<u>260,000</u>	<u>23,900</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>173,200</u>	<u>62,900</u>
Subtotal		2,859,684	651,710	412,800	491,274	109,400	179,600	472,700	542,200
Less: other revenues	Above allocations	(28,800)	(6,600)	(4,200)	(4,900)	(1,100)	(1,800)	(4,800)	(5,500)
Less: revenues from high strength customers (A)	Detailed schedule	<u>(259,874)</u>	<u>(13,300)</u>	<u>(104,700)</u>	<u>(113,874)</u>	<u>(4,300)</u>	<u>(23,700)</u>	<u>-</u>	<u>-</u>
Total Domestic strength Revenue Required		<u>2,571,010</u>	<u>631,810</u>	<u>303,900</u>	<u>372,500</u>	<u>104,000</u>	<u>154,100</u>	<u>467,900</u>	<u>536,700</u>
Total Revenue Required		<u>2,830,884</u>	<u>645,110</u>	<u>408,600</u>	<u>486,374</u>	<u>108,300</u>	<u>177,800</u>	<u>467,900</u>	<u>536,700</u>
Revenue Generated from Current Rates		<u>2,539,900</u>							
Increase Required		<u>\$ 290,984</u>							
% Increase Required		13%							

(A) - The utility does not bill these surcharges directly, but rather passes through the MMSD charges directly to the respective customers.

FITCHBURG SEWER UTILITY

Detailed Operation and Maintenance Expenses Allocation
Forecasted 2018

Schedule 9

	Forecasted 2018	Allocators							Allocations						
		Vol	BOD	SS	TKN	Phos	Dem	Cust	Volume	BOD	SS	TKN	PHOS	Demand	Customer
Operation and Maintenance Expenses															
Operating Expenses															
MMSD domestic treatment charges (5827)	\$ 1,812,510	22	17	20	6	9	15	11	\$ 404,190	\$ 308,127	\$ 369,752	\$ 105,126	\$ 155,876	\$ 262,814	\$ 206,626
MMSD high strength treatment charges (5827)	259,874	5	40	44	2	9	-	-	13,318	104,744	113,785	4,336	23,691	-	-
Transportation expense (5828)	11,690	-	-	-	-	-	-	100	-	-	-	-	-	-	11,690
Joint metering (5830)	90,000	-	-	-	-	-	-	100	-	-	-	-	-	-	90,000
Total Sewer Crew Labor Costs	2,174,074								417,508	412,871	483,537	109,462	179,567	262,814	308,316
Maintenance Expenses															
Maintenance of sewerage collection system (5831)	\$ 67,033	45	-	10	-	-	30	15	30,165	-	6,703	-	-	20,110	10,055
Maintenance of general plant (5834)	5,694	-	-	-	-	-	-	100	-	-	-	-	-	-	5,694
Total Maintenance Expenses	72,727								30,165	-	6,703	-	-	20,110	15,749
Customer Account Expense															
Billing, collecting, accounting (5903)	\$ 66,891	-	-	-	-	-	-	100	-	-	-	-	-	-	66,891
PSN fees (5903-290)	17,000	-	-	-	-	-	-	100	-	-	-	-	-	-	17,000
Meter reading expense (5902)	1,552	-	-	-	-	-	-	100	-	-	-	-	-	-	1,552
Total Customer Account Expenses	85,443								-	-	-	-	-	-	85,443
Administrative & General Expenses															
Admin. Salaries (5920)	\$ 119,530	100	-	-	-	-	-	-	119,530	-	-	-	-	-	-
Office supplies & expenses (5921-310)	5,000	-	-	-	-	-	-	100	-	-	-	-	-	-	5,000
Computer related expenses (5921)	23,670	-	-	-	-	-	-	100	-	-	-	-	-	-	23,670
Outside services (5923)	12,356	-	-	-	-	-	50	50	-	-	-	-	-	6,178	6,178
Insurance expense (5924 & 5925)	15,451	-	-	-	-	-	50	50	-	-	-	-	-	7,726	7,726
Employee pension & benefits (5926)	18,236	40	-	5	-	-	15	40	7,294	-	912	-	-	2,735	7,294
Misc. general expenses (5930)	41,732	100	-	-	-	-	-	-	41,732	-	-	-	-	-	-
Rents (5930-922)	20,000	-	-	-	-	-	-	100	-	-	-	-	-	-	20,000
Taxes (5408)	11,500	100	-	-	-	-	-	-	11,500	-	-	-	-	-	-
Total Administration Labor Costs	267,475								180,056	-	912	-	-	16,639	69,868
Total Sewer Utility O&M Expense	2,599,719								627,729	412,871	491,152	109,462	179,567	299,563	479,376
Less:															
MMSD treatment charges	(2,072,384)								(417,508)	(412,871)	(483,537)	(109,462)	(179,567)	(262,814)	(206,626)
Total	\$ 527,335								\$ 210,221	\$ -	\$ 7,615	\$ -	\$ -	\$ 36,749	\$ 272,750

Please refer to Accountants' Report, Summary of Significant Accounting Policies and Significant Assumptions.

FITCHBURG SEWER UTILITY

Plant in Service

Actual 2016 - Forecasted 2018

Schedule 10

	Actual 12/31/16	Additions	Retirements	Forecasted 12/31/17	Additions	Retirements	Forecasted 12/31/18
Intangible							
Organizations	\$ 197,057	\$ -	\$ -	\$ 197,057	\$ -	\$ -	\$ 197,057
Collecting System							
Collecting mains and accessories	13,149,320	1,355,000	456,650	14,047,670	350,000	-	14,397,670
Interceptor mains and accessories	2,720,456	771,750	-	3,492,206	677,250	-	4,169,456
Other collecting system equipment	51,501	-	-	51,501	-	-	51,501
Total Collection System	15,921,277	2,126,750	456,650	17,591,377	1,027,250	-	18,618,627
Collecting System Pumping							
Electric pumping equipment	584	-	-	584	-	-	584
Total Collection System	584	-	-	584	-	-	584
General Plant							
Office furniture and equipment	5,675	-	-	5,675	-	-	5,675
Computer equipment	111,309	-	-	111,309	-	-	111,309
Transportation equipment	496,622	-	-	496,622	-	-	496,622
Other general equipment	35,246	-	-	35,246	-	-	35,246
Total General Plant	648,852	-	-	648,852	-	-	648,852
Total Sewer Plant in Service	\$ 16,767,770	\$ 2,126,750	\$ 456,650	\$ 18,437,870	\$ 1,027,250	\$ -	\$ 19,465,120

Please refer to Accountants' Report, Summary of Significant Accounting Policies, and Significant Assumptions.

FITCHBURG SEWER UTILITYPlant Additions/Retirements
Forecasted 2017

Schedule 10a

Description	Additions		Retirements
	Amount	Financing	Amount
Collecting System			
Verona Road	\$ 775,000	Utility earnings	\$ 456,650
Fitchrona Road	300,000	Utility financed/assessed/developer*	-
Lacy Road	280,000	Utility financed/assessed/developer*	-
Total Collecting Mains	<u>1,355,000</u>		<u>456,650</u>
Interceptor Mains and Accessories			
Woods Hollow Interceptor	47,250	Utility financed/assessed/developer*	-
Seminole Highway Interceptor	724,500	Utility financed/assessed/developer*	-
Total Interceptor Mains	<u>771,750</u>		<u>-</u>
Total	<u>\$ 2,126,750</u>		<u>\$ 456,650</u>
<u>Summary of Financing</u>			
Utility financed/assessed/developer*	\$ 1,351,750		
Utility earnings	<u>775,000</u>		
Total Additions	<u>\$ 2,126,750</u>		

* Management anticipated projects to be assessed or paid back by a developer when the area develops.

FITCHBURG SEWER UTILITY
 Plant Additions/Retirements
 Forecasted 2018

Schedule 10b

Description	Additions		Retirements
	Amount	Financing	Amount
Collecting Mains			
Terra Vessa Lift Station	\$ 300,000	Utility financed/assessed/developer*	\$ -
Fish Hatchery Road	50,000	Utility earnings	-
Total Collecting Mains	<u>350,000</u>		<u>-</u>
Interceptor Mains and Accessories			
Woods Hollow Interceptor	47,250	Utility financed/assessed/developer*	-
McCoy Interceptor	330,000	Utility financed/assessed/developer*	-
Syene Interceptor	300,000	Utility financed/assessed/developer*	-
Total Interceptor Mains	<u>677,250</u>		<u>-</u>
Total	<u>\$ 1,027,250</u>		<u>\$ -</u>
Summary of Financing			
Utility earnings	\$ 50,000		
Utility financed/assessed/developer*	<u>1,027,250</u>		
Total Additions	<u>\$ 1,077,250</u>		

* Management anticipated projects to be assessed or paid back by a developer when the area develops.

FITCHBURG SEWER UTILITY

Schedule 11

Depreciation Expense
Forecasted 2018

Description	Depreciation Rate (C)	12/31/2016 Depreciation Expense (A)	12/31/2017 Depreciation Expense (B)	12/31/2018 Depreciation Expense (B)
Sewer Laterals	0.0130	112	112	112
Collecting Mains	0.0130	169,329	181,008	185,558
Interceptor Mains	0.0130	35,366	45,399	54,203
Electric Pumping Equipment	0.0750	44	44	44
Transportation Equipment	0.1330	14,939	14,939	14,939
Other General Equipment	0.0580	369	369	369
Total		220,159	241,870	255,225
2016 Ending balance		220,159	220,159	220,159
2017 Activity		-	241,870	241,870
2018 Activity		-	-	255,225
Depreciation Expense		220,159	241,870	255,225

(A) Depreciation expense at year-end is derived from the Continuing Property Records prepared as of 12/31/2016. Depreciation Expense incorporates fully depreciated assets which were updated for the current rate study.

(B) Represent additional depreciation added for each year based on Schedules 10-10b.

(C) Depreciation rate is based on composite rate used in the audited financial statements for corresponding plant accounts.

FITCHBURG SEWER UTILITY

Allocation of Depreciation Expense/Routine capital additions
Forecasted 2018

Acct#	Acct Name	Forecasted 2017	Forecasted 2018	Allocators							Allocations						
				Vol	BOD	SS	TKN	P	Dem	Cust	Volume	BOD	SS	TKN	P	Demand	Customer
Collection System																	
312	Sewer Laterals	\$112	\$112	0	0	0	0	0	0	100	\$0	\$0	\$0	\$0	\$0	\$0.00	\$112
313	Collections mains & Access.	181,008	185,558	5	0	0	0	0	70	25	9,278	-	-	-	-	129,890	46,389
314	Interceptor mains & Access.	45,399	54,203	5	0	0	0	0	70	25	2,710	-	-	-	-	37,942	13,551
Total Collection System		226,518	239,873								11,988	-	-	-	-	167,832	60,052
Collection System Pumping Plant																	
323	Electric pumping equip	44	44	85	0	0	0	0	5	10	37	-	-	-	-	2	4
General Plant																	
373	Transportation equip.	14,939	14,939	75	0	0	0	0	14	11	11,204	-	-	-	-	2,091	1,643
379	Miscellaneous equip.	369	369	75	0	0	0	0	14	11	277	-	-	-	-	52	41
Total General Plant		15,308	15,308								11,481	-	-	-	-	2,143	1,684
Total Wastewater Plant in Service		241,870	255,225								23,506	-	-	-	-	169,978	61,740
											9.21%	0.00%	0.00%	0.00%	0.00%	66.60%	24.19%

Please refer to Accountants' Report, Summary of Significant Accounting Policies and Significant Assumptions.

FITCHBURG SEWER UTILITY

Calculation of Volume Charges
Forecasted 2018

Schedule 12

CALCULATION OF VOLUME CHARGE

	2018 Est. Cost of Service	Estimated Loadings	Unit Cost
Volume	\$ 631,810	654,900 /000 gals	\$ 0.965 /000 gals
BOD	303,900	1,092,373 lbs	0.278 /lb
SS	372,500	1,365,467 lbs	0.273 /lb
TKN	104,000	218,475 lbs	0.476 /lb
PHOS	154,100	38,233 lbs	4.031 /lb
Total	<u>\$ 1,566,310</u>		

Calculated Domestic Strength Rates:

Volume						\$ 0.965
BOD	200	x	0.00834	x	\$ 0.278	= 0.464
SS	250	x	0.00834	x	0.273	= 0.569
TKN	40	x	0.00834	x	0.476	= 0.159
P	7	x	0.00834	x	4.031	= <u>0.235</u>
Rate per 1,000 gallons (Domestic)						<u>\$ 2.392</u> /000 gals

Summary of Rates:

Volume Charge	\$ 2.39 /000 gals
Surcharges:	
BOD above 200 mg/l	0.28 /lb
SS above 250 mg/l	0.27 /lb
TKN above 40 mg/l	0.48 /lb
P above 7 mg/l	4.03 /lb

Estimated 2018 loadings:

Volume						654,900 /000 gals
BOD (lbs)	654,900	x	0.00834	x	200	= 1,092,373 lbs
SS (lbs)	654,900	x	0.00834	x	250	= 1,365,467 lbs
TKN (lbs)	654,900	x	0.00834	x	40	= 218,475 lbs
P (lbs)	654,900	x	0.00834	x	7	= 38,233 lbs

FITCHBURG SEWER UTILITY
 Calculation of Minimum Quarterly Charges
 Equivalent Meter Method
 Forecasted 2018

Schedule 13

CALCULATION OF METER CHARGES

Meter Size	Customers	Demand Ratio	Equivalent Meters	(A) Computed Quarterly Demand Charge	(B) Computed Quarterly Customer Charge	Computed Quarterly Charge	Current Quarterly Charge	Proposed Quarterly Charge
5/8" & 3/4"	5,449	1.5	8,173	\$ 15.80	\$ 22.50	\$ 38.30	\$ 36.30	\$ 38.30
1"	166	2.5	416	26.30	22.50	48.80	45.90	48.80
1-1/2"	142	5.0	709	52.70	22.50	75.00	70.60	75.00
2"	196	8.0	1,568	84.30	22.50	107.00	100.10	107.00
3"	11	15.0	158	158.10	22.50	181.00	168.50	181.00
4"	1	25.0	25	263.40	22.50	286.00	266.20	286.00
6"	<u>1</u>	50.0	<u>51</u>	526.90	22.50	549.00	510.80	549.00
Totals	<u>5,966</u>		<u>11,101</u>					

(A) - Total Demand Related Costs \$ 467,900 / 11,101 /4 \$ 10.50 Equivalent Meters per Quarter

(B) - Total Customer Costs 536,700 / 5,966 /4 22.50 Quarterly Customer Charge per Quarter

FITCHBURG SEWER UTILITY

Consumer Analysis - Total
Forecasted 2018 - Proposed

	Rates		Residential		Multi-Family Residential		Commercial		Industrial		Public Authority		Total	
			Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue
Volume Charge	\$	2.39 /1,000 gals	<u>249,300</u>	\$ 595,800	<u>258,800</u>	\$ 618,500	<u>98,500</u>	\$ 235,400	45,500	\$ 108,700	<u>2,800</u>	\$ 6,700	<u>654,900</u>	\$ 1,824,974
Volume (MG)	648.61	/MG							21	13,318				
CBOD5 (lbs)	0.15573	/lbs							672,601	104,744				
SS (lbs)	0.25196	/lbs							451,600	113,785				
TKN (lbs)	0.38193	/lbs							11,353	4,336				
Total P (lbs)	4.25832	/lbs							5,563	<u>23,691</u>				
										\$ 368,574				

Meter Charge	Rates	Meters	Billings	Meters	Billings	Meters	Billings	Meters	Billings	Meters	Billings	Meters	Billings	Meters	Billings
5/8" & 3/4"	\$ 38.30 /Qtr	5,247	20,987	803,800	17	68	2,600	178	712	27,300	4	16	600	3	13
1"	48.80 /Qtr	18	72	3,500	57	227	11,100	85	341	16,600	2	8	400	4	17
1-1/2"	75.00 /Qtr	1	4	300	92	366	27,500	38	152	11,400	9	37	2,700	2	9
2"	107.00 /Qtr	-	-	-	139	555	59,400	39	158	16,900	9	35	3,700	9	37
3"	181.00 /Qtr	-	-	-	2	8	1,500	6	26	4,700	2	8	1,500	-	-
4"	286.00 /Qtr	-	-	-	-	-	-	-	-	-	1	4	1,200	-	-
6"	549.00 /Qtr	-	-	-	-	-	-	-	-	-	1	4	2,200	-	-
Sub-total		<u>5,266</u>	<u>21,063</u>	807,600	<u>306</u>	<u>1,224</u>	102,100	<u>347</u>	<u>1,388</u>	76,900	<u>28</u>	<u>112</u>	12,300	<u>19</u>	<u>76</u>
Total Computed Revenue				<u>\$ 1,403,400</u>			<u>\$ 720,600</u>			<u>\$ 312,300</u>			<u>\$ 380,874</u>		<u>\$ 12,600</u>
															<u>\$ 2,829,774</u>

Please refer to Accountants' Report, Summary of Significant Accounting Policies and Significant Assumptions.

FITCHBURG SEWER UTILITY

Quarterly Bill Comparison

Schedule 15

Forecasted 2018 - Proposed

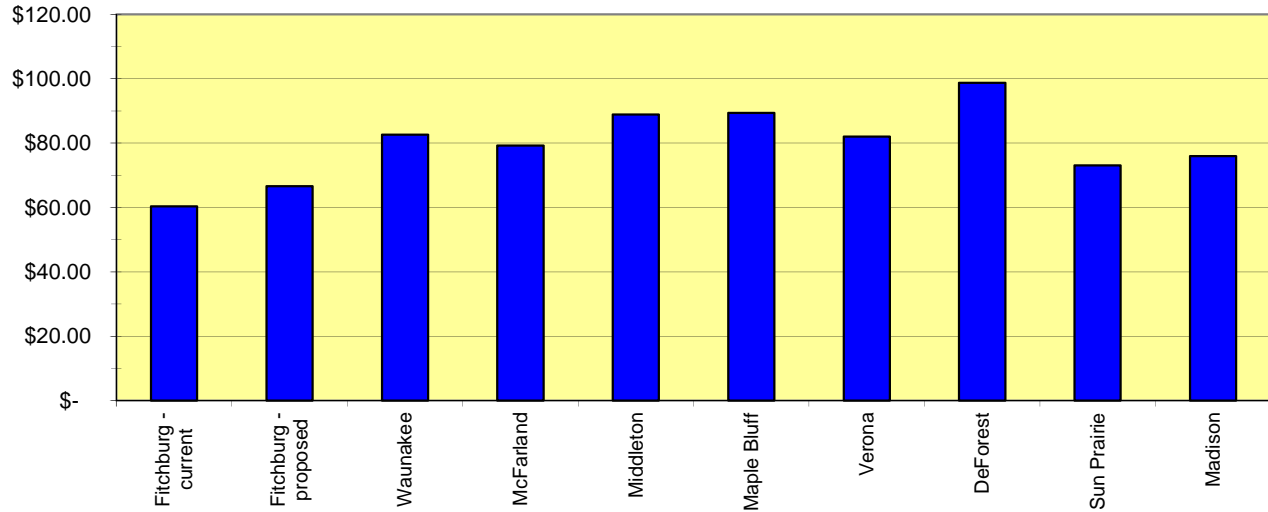
Customer	Quarterly Volume (gallons)	Meter	Quarterly Charge			
			Present	Proposed	Inc / (Dec)	%
Average Residential	11,840	5/8"	60.34	66.60	6.26	10%
Average MF Residential	211,440	2"	529.32	612.34	83.02	16%
Average Commercial	70,990	5/8"	180.41	207.97	27.56	15%
Industrial- No surcharges	387,340	2"	886.40	1,032.74	146.34	17%
Public Authority	36,930	2"	175.07	195.26	20.19	12%

Rates		Current		Proposed	
Volume Charge	Per 1,000 gal	\$	2.03	\$	2.39
Qtrly. Meter Charge	5/8"&3/4"		36.30		38.30
	1"		45.90		48.80
	1-1/2"		70.60		75.00
	2"		100.10		107.00
	3"		168.50		181.00
	4"		266.20		286.00
	6"		510.80		549.00

Please refer to Accountants' Report, Summary of Significant Accounting Policies and Significant Assumptions.

FITCHBURG SEWER UTILITY

Average Residential Bill Comparison



Utility	Effective Date	Volume	Charge	Fixed	Bill
Average residential sample bill		11.84 1,000 gallons	5/8" meter		
		15.8 100 CF			
Fitchburg	January 1, 2018				
Current		\$ 2.03 per 1,000 gallons	\$ 36.30 per quarter		\$ 60.34
Proposed		2.39 per 1,000 gallons	38.30 per quarter		66.60
Waunakee	January 1, 2016	3.85 per 1,000 gallons	12.36 per month 37.08 per quarter		82.66
McFarland	January 1, 2016	3.14 per 1,000 gallons	28.05 per bi-month 42.08 per quarter		79.25
Middleton	December 15, 2016	2.76 per 1,000 gallons	28.10 per quarter		88.88
Maple Bluff	January 1, 2018	3.75 per 100 CF 5.01 per 1,000 gallons	30.10 per quarter		89.35
Verona	January 1, 2017	3.54 per 1,000 gallons	40.11 per quarter		82.02
DeForest	December 20, 2017	4.89 per 1,000 gallons	13.60 per month 40.80 per quarter		98.70
Sun Prairie	January 1, 2018	2.87 per 100 CF 3.84 per 1,000 gallons	9.23 per month 27.69 per quarter		73.04
Madison	March 21, 2017	2.74 per 1,000 gallons	14.49 per month 43.47 per quarter		75.91

Please refer to Accountants' Report, Summary of Significant Accounting Policies and Significant Assumptions.

Department and Item Description	Duration/Unit	2017 Fee Schedule	2018 Proposed	New Ordinance Ref.	Notes
Utility Department					
Sewer Rates				Chapter40 - Article III	
Flat Rate (No Meter)	*Per Quarter (Ongoing)	\$60.00	\$60.00		
5/8" & 3/4" Meter	*Per Quarter (Ongoing)	\$36.30	\$38.30		
1" Meter	*Per Quarter (Ongoing)	\$45.90	\$48.80		
1 1/2" Meter	*Per Quarter (Ongoing)	\$70.60	\$75.00		
2" Meter	*Per Quarter (Ongoing)	\$100.10	\$107.00		
3" Meter	*Per Quarter (Ongoing)	\$168.50	\$181.00		
4" Meter	*Per Quarter (Ongoing)	\$266.20	\$286.00		
6" Meter	*Per Quarter (Ongoing)	\$510.80	\$549.00		
Volume Charge	* per 1,000 gallons	\$2.03	\$2.39		
Holding Tank Permit	Upon Application				