

# **COLUMBUS SEWER UTILITY**

Columbus, Wisconsin

FORECASTED 2018  
SEWER RATE STUDY

Prepared as of October 10, 2017

# COLUMBUS SEWER UTILITY

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## ACCOUNTANTS' COMPILATION REPORT

Columbus Sewer Utility  
Columbus, Wisconsin

Management is responsible for the accompanying forecasted Schedules 1 through 23 ("Schedules") as identified in the table of contents of the Columbus Sewer Utility, an enterprise fund of the City of Columbus for the remainder of 2017 and forecasted test year ending December 31, 2018, including the related summaries of significant assumptions and accounting policies in accordance with guidelines for the presentation of a financial 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 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 the 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, 2014 through 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  
October 10, 2017

# COLUMBUS SEWER UTILITY

## MANAGEMENT INFORMATION

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### PURPOSE AND SCOPE

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We have prepared this report to design rates that should provide for a self-sustaining utility. The process of developing rates in this report includes three steps:

1. Develop a cash basis revenue requirement to determine the amount of revenue needed to cover operating costs debt service and normalized funding for ongoing capital replacement. This includes analyzing prior costs and forecasting the 2018 test year results.
2. Prepare a cost of service study to allocate the revenue requirement to customers based on the actual cost to serve them.
3. Design rates based on the cost of service study and/or other management objectives.

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### HISTORY OF PRESENT RATES

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Present rates being charged by the Columbus Sewer Utility are set based on a study using a 2008 test year. Rates were reviewed in 2010, 2014 and 2016 but were not changed. The 2008 and 2018 revenue requirement is presented below:

	<u>2008</u>	<u>Test Year 2018</u>
Operation and maintenance expense	\$ 643,100	\$ 814,100
Treatment plant replacement fund	120,100	156,400
Collection system replacement fund	101,700	118,600
Pump replacement fund	16,900	24,500
Debt service	618,700	436,800
Less: Other revenues	<u>(138,000)</u>	<u>(128,200)</u>
Total Revenue Required from Rates	<u>\$ 1,362,500</u>	<u>\$ 1,422,200</u>

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### SUMMARY OF RESULTS

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Based on the results presented in the following schedules, the utility would need to increase City rates by 4% to meet the forecasted 2018 revenue requirement. This is primarily due to an increase in operation and maintenance expenses and replacement funding requirements offset by a decrease in debt service. It was also determined that the rates for Elba Sanitary District No. 2 could be decreased by 20% to \$2.27 per 1,000 gallons as shown in Schedule 11A. While the anticipated billing units from Elba increased, they represent a smaller portion of the overall volume treated resulting in a lower cost allocation. Lastly the study shows that the rates for the Village of Fall River could be decreased by 16.5% to \$2.00 per 1,000 gallons. This was due to a decrease in operation and maintenance and administrative and general expenses allocated to Fall River based on a decrease in volume treated since the last study.

# COLUMBUS SEWER UTILITY

## MANAGEMENT INFORMATION

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### SEWER REVENUE REQUIREMENT

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The sewer rates for the City of Columbus are designed to meet the following requirements:

1. Cash requirements of the utility
2. Consistency with existing rate design structure
3. Compliance with debt service coverage
4. DNR rate design requirements

#### ***Cash Requirements***

Cash flow methodology means that the rates are generally designed to meet the cash needs of the utility, as opposed to a regulated utility rate base revenue requirement. Costs include replacement of equipment over the useful life of that equipment rather than the actual cash outlay for capital projects projected. Utility rates must be adequate to allow the utility to pay operation and maintenance expenses, pay the utility debt service and allow for replacement funds. Schedule 1 shows the cash requirements.

#### ***Existing Rate Design Structure***

The rate theory used in this study is essentially the same as that used in the prior study. The allocation percentages used for operation and maintenance expenses and replacement costs are essentially the same as those used in the previous study. By maintaining this continuity, no class of customers should see a change significantly different than any other class of customers.

#### ***Debt Service Coverage***

This study designs rates sufficient to adhere to the revenue bond resolution requirements. The bond resolution requires "earnings" to be more than 125% of the annual revenue bond debt service requirement. General obligation debt is not included in this calculation. The current and proposed rates are expected to meet this requirement for 2018 as illustrated below:

	<u>Current Rates</u>	<u>Proposed Rates</u>
Operating revenues	\$ 1,395,900	\$ 1,422,300
Other income	128,200	128,200
Less: Operation and maintenance expenses	<u>(814,100)</u>	<u>(814,100)</u>
Net Funds for Debt Service	<u>\$ 710,000</u>	<u>\$ 736,400</u>
Revenue bond debt service including TIF share	\$ 358,200	\$ 358,200
Coverage factor	<u>125%</u>	<u>125%</u>
Required Earnings	<u>\$ 447,800</u>	<u>\$ 447,800</u>
Actual Coverage	<u>198%</u>	<u>206%</u>

# COLUMBUS SEWER UTILITY

## MANAGEMENT INFORMATION

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### **SEWER REVENUE REQUIREMENT (cont.)**

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#### ***DNR Rate Design Requirements***

The DNR, as a condition to issuing construction grants and loans, requires rates to be flow proportional for operation, maintenance and replacement fund costs. This means that charges reflect the relative customer volume and strength of wastewater and size of meter connections. The computed and existing rates are both designed to comply with these requirements.

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### **COST OF SERVICE STUDY**

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The purpose of a cost of service study is to allocate costs among different parameters of service and provide the basis for designing rates.

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 are generally allocated to volume, BOD, suspended solids, TKN, phosphorous, demand, and customer costs based on engineer estimates. Volume related operation and maintenance expenses were allocated to Elba Sanitary District No. 2, Columbus, and the Village of Fall River based on estimated volumes. The Fall River and Elba allocations are based on percentage of total wholesale volume compared to the total Columbus volume treated, not sold. The approximate 53 percent infiltration inflow shown on Schedule 3 will be allocated entirely to the City's operation and maintenance costs.
2. Allocations of equipment replacement costs are distributed using percentages derived from the allocation of the cost of the treatment plant.
3. Collection system replacement fund costs are distributed based on the collection system plant allocators. Allocations for replacement costs of the collection system and pumping equipment relate to city volume and customer costs only, as Elba Sanitary District No. 2 or the Village of Fall River do not share in the collection system.
4. The 2007 and 2017 debt issuances are allocated to the City of Columbus since the additions relate to main projects in the city. The 2010 debt issue is allocated to the City of Columbus and Elba Sanitary District No. 2 because it was used for upgrades to the waste water treatment plant. Fall River is excluded from these debt issues since their connection fee recovered their share of debt.
5. Other revenues are allocated based on the weighted average of volume, BOD, SS, TKN, phosphorous, demand and customer costs.
6. The City of Columbus presently has one high strength customer shown as other revenue. Fall River is billed a minor amount of high strength which is shown as other revenue. Management does not anticipate any changes in this for 2018.
7. To maintain consistency in rates with prior studies \$205,000 was removed from volume charges and added to fixed charges in the cost of service schedule. This adjustment causes fixed charges to be artificially higher and volume charges to be artificially lower but minimizes rate shifts.

# COLUMBUS SEWER UTILITY

## SUMMARY OF SIGNIFICANT ASSUMPTIONS

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### **SIGNIFICANT ASSUMPTIONS**

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The forecast is compiled based on utility management's assumptions and presents, to the best of management's knowledge and belief, the utility's expected results of operations, and required revenues for the forecasted period. It is based on management's assumptions as of October 10, 2017 reflecting conditions it expects to exist and the courses of action it is likely to take during the forecasted period. The assumptions disclosed herein are those that management believe are significant to the forecast and are not all-inclusive. There will usually be differences between forecasted and actual results because events and circumstances frequently do not occur as expected, and those differences may be material.

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### **REVENUES**

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Revenue forecast, as shown on Schedule 2A is based on actual volume of wastewater and customer count trends from 2014 through 2016. Normal increases in customers are forecasted for 2017 and 2018. Miscellaneous service revenues and investment income are forecasted based on the utility's budget.

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### **EXPENSES**

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Operation and maintenance expenses are forecasted in Schedule 3 based on the utility budget, historical trends, and discussions with utility management.

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### **REPLACEMENT FUNDS**

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The basic amount to be funded for replacement of the treatment plant was determined in the previous study and revised for changes since then. The calculation and support for these amounts can be found on schedules 14, 15, and 16. The recommended funding for each account is as follows; pump replacement fund of \$24,500, treatment plant replacement fund \$156,400 and the collection system replacement fund \$118,600. There are various capital projects that will be taking place during 2018. The payment for these projects can be funded out of the various three replacement accounts, as shown on Schedule 12.

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### **DEBT SERVICE**

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Debt service requirements outlined on Schedule 8 are based on the repayment schedule for the 2007 State of Wisconsin Clean Water Fund borrowing, the 2010 State of Wisconsin Clean Water Fund borrowing, the 2017 General Obligation refunding bonds, and the 2017 Revenue bonds.

# COLUMBUS SEWER UTILITY

## SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

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### REVENUE RECOGNITION

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Sewer revenues are recorded for service rendered based on water meter readings, with billings made to customers monthly. The utility does not accrue revenues for service delivered after the December meter reading date.

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### EXPENSES

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Historical operation and maintenance expenses are reported on the accrual basis. Forecasted 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.

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### PLANT

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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.

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### DEPRECIATION

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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 replacement funds to generate cash flow for plant replacement.



## **SCHEDULES**

**COLUMBUS SEWER UTILITY**  
 Revenue Requirement Summary  
 Actual 2014 - Forecasted 2018

	<u>Actual 2014</u>	<u>Actual 2015</u>	<u>Actual 2016</u>	<u>Budgeted 2017</u>	<u>Current Rates Forecasted 2018</u>	<u>Cost Based Rates Forecasted 2018</u>
<b>REVENUES</b>						
Metered Sales						
Residential	\$ 838,247	\$ 848,228	\$ 852,564	\$ 850,000	\$ 869,100	\$ 898,500
Commercial	309,435	317,912	319,803	310,000	328,800	345,600
Industrial	31,181	28,451	26,141	25,000	27,100	28,700
Public Authority	26,173	26,686	24,504	24,500	25,800	27,700
Elba Sanitary District	12,255	17,030	11,956	12,000	8,900	7,900
Village of Fall River	<u>115,297</u>	<u>140,210</u>	<u>117,128</u>	<u>120,000</u>	<u>136,200</u>	<u>113,900</u>
Total Metered Sales	<u>1,332,588</u>	<u>1,378,517</u>	<u>1,352,096</u>	<u>1,341,500</u>	<u>1,395,900</u>	<u>1,422,300</u>
Other Revenues						
High Strength Customers	-	-	9,597	30,000	30,000	30,000
Miscellaneous service revenues	25,567	33,153	49,063	40,500	40,500	40,500
Connection charges - Impact Fees	58,000	40,500	19,000	15,000	15,000	15,000
Interest Subsidy - Build America Bonds	2,036	2,641	-	-	-	-
Investment income	19,754	24,915	15,858	17,500	17,500	17,500
Transfer from TIF #3	<u>23,272</u>	<u>23,737</u>	<u>24,212</u>	<u>24,696</u>	<u>25,200</u>	<u>25,200</u>
Total Other Revenues	<u>128,629</u>	<u>124,946</u>	<u>117,730</u>	<u>127,696</u>	<u>128,200</u>	<u>128,200</u>
Total Revenues	<u>1,461,217</u>	<u>1,503,463</u>	<u>1,469,826</u>	<u>1,469,196</u>	<u>1,524,100</u>	<u>1,550,500</u>
<b>REVENUE REQUIRED</b>						
Operation and maintenance expenses	724,630	821,778	783,702	965,800	814,100	814,100
Treatment plant replacement fund	139,800 (1)	147,900 (1)	147,900 (1)	147,900 (1)	156,400	156,400
Collection system replacement fund	104,100 (1)	121,600 (1)	121,600 (1)	121,600 (1)	118,600	118,600
Pump replacement fund	26,200 (1)	24,700 (1)	24,700 (1)	24,700 (1)	24,500	24,500
Debt service	<u>328,469 (3)</u>	<u>552,362 (3)</u>	<u>320,362</u>	<u>357,295</u>	<u>436,800</u>	<u>436,800</u>
Total Revenue Required	<u>1,323,199</u>	<u>1,668,340</u>	<u>1,398,264</u>	<u>1,617,295</u>	<u>1,550,400</u>	<u>1,550,400</u>
Revenue Excess (Deficiency)	\$ <u>138,018</u>	\$ <u>(164,877)</u>	\$ <u>71,562</u>	\$ <u>(148,099)</u>	\$ <u>(26,300)</u>	\$ <u>100</u>

(1) Based on recommended account funding from the prior rate study.

(2) Interest subsidy is not included in 2016 - 2018 because the Build America Bonds were refinanced in fiscal year 2015.

(3) In 2015, the 2008 GO Bonds and 2010 Build America Bonds were paid off. Prior year debt service includes these balances. 2015 balances include scheduled principal and interest and debt payoff.

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

## COLUMBUS SEWER UTILITY

Sales Forecast

Actual 2014 - Forecasted 2018

	Actual 2014	Actual 2015	Actual 2016	12 Months Ending Usage 3/31/2017	Forecasted 2018
Residential					
Average number of customers	1,889	1,898	1,924	1,980	1,990
Cubic feet billed (00's)	95,595	90,720	92,032	92,003	92,535
Average consumption per cust.	50.6	47.8	47.8	46.5	46.5
Percentage chg. in consumption		-5.10%	1.37%	-0.03%	0.58%
Percentage chg. in customers		0.48%	1.37%	2.91%	0.51%
Commercial					
Average number of customers	224	229	230	253	255
Cubic feet billed (00's)	43,327	44,343	43,954	45,009	45,365
Average consumption per cust.	193.4	193.6	191.1	177.9	177.9
Percentage chg. in consumption		2.34%	0.44%	2.40%	0.79%
Percentage chg. in customers		2.23%	0.44%	10.00%	0.79%
Industrial					
Average number of customers	8	8	8	9	9
Cubic feet billed (00's)	5,243	4,669	4,348	4,555	4,555
Average consumption per cust.	655.4	583.6	543.5	506.1	506.1
Percentage chg. in consumption		-10.95%	-6.88%	4.77%	-0.01%
Percentage chg. in customers		0.00%	0.00%	12.50%	0.00%
Public Authority					
Average number of customers	21	20	20	30	30
Cubic feet billed (00's)	3,384	3,281	3,014	3,009	3,008
Average consumption per cust.	161.1	164.1	150.7	100.3	100.3
Percentage chg. in consumption		-3.04%	-8.14%	-0.17%	-0.03%
Percentage chg. in customers		-4.76%	0.00%	50.00%	0.00%
Wholesale - Elba (1) (2)					
Gallons billed (000's)	3,981	4,432	3,875	3,689	4,100
Percentage chg. in consumption		11.33%	-12.57%	-4.80%	11.14%
Wholesale - Fall River (3)					
Gallons billed (000's)	60,298	72,834	55,726	57,000	57,000
Percentage chg. in consumption		20.79%	-23.49%	2.29%	0.00%
Totals					
Average number of customers	2,142	2,155	2,182	2,272	2,284
Cubic feet billed (00's)	147,549	143,013	143,348	144,577	145,462
Wholesale gallons billed (000's)	64,279	77,266	59,601	60,689	61,100

(1) Elba Revenue is forecasted on Schedule 21.

(2) Forecasted 2018 usage for Elba is based on a three year average due to fluctuations in usage.

(3) Fall River Revenue is forecasted on Schedule 22.

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

**COLUMBUS SEWER UTILITY**  
 Consumer Analysis  
 Last 12 Months with Usage Ending 3/31/17

Volume Charge	Authorized Rates	Residential			Commercial			Industrial			Public Authority			Total		
		Units	Revenue		Units	Revenue		Units	Revenue		Units	Revenue		Units	Revenue	
	\$5.36 /100 ccf	92,003	\$ 493,136		45,009	\$ 241,250		4,555	\$ 24,417		3,009	\$ 16,128		144,577	\$ 774,931	
Meter Charge		Meters	Billings	Revenues	Meters	Billings	Revenues	Meters	Billings	Revenues	Meters	Billings	Revenues	Meters	Billings	Revenues
5/8 & 3/4	15.60 /Month	1,969	23,628	368,597	158	1,896	29,578	3	36	562	14	168	2,621	2,144	25,728	401,357
1	20.00 /Month	10	120	2,400	43	516	10,320	2	24	480	1	12	240	56	672	13,440
1-1/4	23.00 /Month	1	12	276	0	0	0	0	0	0	0	0	0	1	12	276
1-1/2	26.00 /Month	0	0	0	24	288	7,488	2	24	624	4	48	1,248	30	360	9,360
2	34.00 /Month	0	0	0	22	264	8,976	1	12	408	9	108	3,672	32	384	13,056
3	53.00 /Month	0	0	0	4	48	2,544	1	12	636	0	0	0	5	60	3,180
4	80.00 /Month	0	0	0	2	24	1,920	0	0	0	2	24	1,920	4	48	3,840
Master Units	7.25 /Unit	0	0	0	281	3,372	24,447	0	0	0	0	0	0	281	3,372	24,447
Sub-total		<u>1,980</u>	<u>23,760</u>	<u>371,273</u>	<u>534</u>	<u>6,408</u>	<u>85,273</u>	<u>9</u>	<u>108</u>	<u>2,710</u>	<u>30</u>	<u>360</u>	<u>9,701</u>	<u>2,553</u>	<u>30,636</u>	<u>468,956</u>
Total Revenues Per Analysis			\$ <u>864,409</u>			\$ <u>326,522</u>			\$ <u>27,126</u>			\$ <u>25,829</u>			\$ <u>1,243,886</u>	
Total Actual Revenues			\$ <u>853,747</u>			\$ <u>325,669</u>			\$ <u>27,249</u>			\$ <u>24,446</u>			\$ <u>1,231,111</u>	
Dollar Variance			\$ <u>10,662</u>			\$ <u>853</u>			\$ <u>(123)</u>			\$ <u>1,383</u>			\$ <u>12,775</u>	
Percent Variance			<u>1.23%</u>			<u>0.26%</u>			<u>-0.45%</u>			<u>5.35%</u>			<u>1.03%</u>	

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

**COLUMBUS SEWER UTILITY**

Revenue Analysis  
Forecasted 2018

Volume Charge	Authorized Rates	Residential		Commercial		Industrial		Public Authority		Total						
		Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue					
	\$5.36 /100 ccf	92,535	\$ 495,988	45,365	\$ 243,154	4,555	\$ 24,414	3,008	\$ 16,123	145,462	\$ 779,679					
Meter Charge		Meters	Billings	Revenues	Meters	Billings	Revenues	Meters	Billings	Revenues	Meters	Billings	Revenues	Meters	Billings	Revenues
5/8 & 3/4	15.60 /Month	1,979	23,748	370,469	160	1,920	29,952	3	36	562	14	168	2,621	2,156	25,872	403,604
1	20.00 /Month	10	120	2,400	43	516	10,320	2	24	480	1	12	240	56	672	13,440
1-1/4	23.00 /Month	1	12	276	0	0	0	0	0	0	0	0	0	1	12	276
1-1/2	26.00 /Month	0	0	0	24	288	7,488	2	24	624	4	48	1,248	30	360	9,360
2	34.00 /Month	0	0	0	22	264	8,976	1	12	408	9	108	3,672	32	384	13,056
3	53.00 /Month	0	0	0	4	48	2,544	1	12	636	0	0	0	5	60	3,180
4	80.00 /Month	0	0	0	2	24	1,920	0	0	0	2	24	1,920	4	48	3,840
Master Units	7.25 /Unit	0	0	0	281	3,372	24,447	0	0	0	0	0	0	281	3,372	24,447
Sub-total		<u>1,990</u>	<u>23,880</u>	<u>373,145</u>	<u>536</u>	<u>6,432</u>	<u>85,647</u>	<u>9</u>	<u>108</u>	<u>2,710</u>	<u>30</u>	<u>360</u>	<u>9,701</u>	<u>2,565</u>	<u>30,780</u>	<u>471,203</u>
Total Revenues Per Analysis			\$ <u>869,133</u>			\$ <u>328,801</u>		\$ <u>27,124</u>		\$ <u>25,824</u>		\$ <u>1,250,882</u>				
Totals Rounded			\$ <u>869,100</u>			\$ <u>328,800</u>		\$ <u>27,100</u>		\$ <u>25,800</u>		\$ <u>1,250,800</u>				

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

**COLUMBUS SEWER UTILITY**  
Detailed Operation and Maintenance Expenses  
Actual 2014 - Forecasted 2018

	Actual 2014	Actual 2015	Actual 2016	Budgeted 2017	Forecasted 2018	Allocation		
						City of Columbus	Elba Sanitary District	Fall River
Operating Expenses								
Supervision and labor	\$ 55,648	\$ 54,220	\$ 71,155	\$ 66,450	\$ 68,100 (A)	\$ 56,708	\$ 656	\$ 10,736
Employee pensions & benefits	21,923	23,175	45,870	35,875	36,800 (A)	30,645	354	5,801
Power and fuel for pumping equipment	13,942	9,577	8,725	13,000	13,300 (A)	11,075	128	2,097
Power and fuel for aeration equipment	76,490	83,696	73,059	80,000	82,000 (A)	68,283	790	12,927
Chlorine	25,209	25,175	31,011	30,000	30,800 (A)	25,647	297	4,856
Transportations	6,088	6,877	5,249	6,500	6,700 (A)	5,579	65	1,056
Other operating supplies & expense	39,043	16,742	18,356	32,250	33,000 (A)	27,480	318	5,202
Total Operating Expenses	<u>238,343</u>	<u>219,462</u>	<u>253,425</u>	<u>264,075</u>	<u>270,700</u>	<u>225,417</u>	<u>2,608</u>	<u>42,675</u>
Sludge Processing								
Operation - labor	9,463	8,812	16,014	15,175	15,600 (A)	12,991	150	2,459
Employees pensions & benefits	3,563	4,116	6,674	8,243	8,400 (A)	6,995	81	1,324
Repairs and maintenance	2,495	7,223	7,054	145,000	8,300 (A)	6,912	80	1,308
Chemicals	4,976	6,404	2,673	7,800	5,200 (A)	4,330	50	820
Total Sludge Processing	<u>20,497</u>	<u>26,555</u>	<u>32,415</u>	<u>176,218</u>	<u>37,500</u>	<u>31,228</u>	<u>361</u>	<u>5,911</u>
Maintenance Expenses								
Maint. of sewage collection system								
Supervision and labor	22,977	22,371	19,637	18,480	18,900 (A)	18,900	-	-
Employees pensions & benefits	9,045	10,058	8,353	10,100	10,400 (A)	10,400	-	-
Other	6,998	145,482	16,019	99,500	57,800 (A)	57,800	-	-
Maint. Of Pumping Equipment								
Supervision and labor	7,271	6,771	5,360	5,259	5,400 (A)	5,400	-	-
Employees pensions & benefits	2,738	3,162	2,287	2,833	2,900 (A)	2,900	-	-
Other	11,851	8,984	21,490	16,650	17,100 (A)	17,100	-	-
Treatment and disposal equipment								
Supervision and labor	69,565	67,775	48,273	44,930	46,100 (A)	38,388	444	7,268
Employees pensions & benefits	27,513	29,735	20,954	24,372	25,000 (A)	20,818	241	3,941
Other	24,991	10,725	30,570	36,000	36,900 (A)	30,728	355	5,817
Buildings and Grounds								
Supervision and labor	10,923	10,173	17,895	16,850	17,300 (A)	14,406	167	2,727
Employees pensions & benefits	4,113	15,677	7,470	9,077	9,300 (A)	7,744	90	1,466
Other	13,489	12,790	15,560	3,000	14,300 (A)	11,908	138	2,254
Total Maintenance Expenses	<u>211,474</u>	<u>343,703</u>	<u>213,868</u>	<u>287,051</u>	<u>261,400</u>	<u>236,492</u>	<u>1,435</u>	<u>23,473</u>
Customer Accounts Expenses								
Billing, collecting and accounting	72,075	70,406	65,217	72,000	73,800 (A)	73,800	-	-
Total Customer Accounts Expenses	<u>72,075</u>	<u>70,406</u>	<u>65,217</u>	<u>72,000</u>	<u>73,800</u>	<u>73,800</u>	<u>-</u>	<u>-</u>
Total Operating Expenses before Administrative and General Expenses					\$ <u>643,400</u>	\$ <u>566,937</u>	\$ <u>4,404</u>	\$ <u>72,059</u>

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

**COLUMBUS SEWER UTILITY**  
Detailed Operation and Maintenance Expenses  
Actual 2014 - Forecasted 2018

	Actual 2014	Actual 2015	Actual 2016	Budgeted 2017	Forecasted 2018	Allocation		
						City of Columbus	Elba Sanitary District	Fall River
Administrative and general salaries	\$ 72,866	\$ 59,825	\$ 61,988	\$ 62,595	\$ 64,200 (A)	\$ 56,571	\$ 439	\$ 7,190
Office supplies and expenses	1,785	1,949	2,187	2,500	2,600 (A)	2,291	18	291
Outside services	56,102	49,844	101,853	40,000	41,000 (A)	36,127	281	4,592
Insurance expense	21,880	19,000	19,971	26,439	27,100 (A)	23,880	185	3,035
Miscellaneous	1,662	2,184	2,292	2,350	2,400 (A)	2,115	16	269
Economic development contribution	8,333	10,000	10,000	10,000	10,300 (A)	9,075	71	1,154
Pensions and benefits	19,613	18,850	20,486	22,533	23,100 (A)	20,355	158	2,587
Total Admin. and General Expenses	<u>182,241</u>	<u>161,652</u>	<u>218,777</u>	<u>166,417</u>	<u>170,700</u>	<u>150,414 (B)</u>	<u>1,168 (B)</u>	<u>19,118 (B)</u>
Total Operation and Maint. Expenses	\$ <u>724,630</u>	\$ <u>821,778</u>	\$ <u>783,702</u>	\$ <u>965,761</u>	\$ <u>814,100</u>	\$ <u>717,351</u>	\$ <u>5,572</u>	\$ <u>91,177</u>
Volume Allocation Basis:	Annual Volume	O&M allocation %	A&G allocation %					
Forecasted 2018 - City (000 gallons) billed	108,143 (C)	29.89%	88.12%					
Forecasted 2018 City Infiltration inflow	193,131 (C)	53.38%						
Forecasted 2018 - Elba (000 gallons)	3,485 (F)	0.96% (E)	0.68%					
Forecasted 2018 - Fall River (000 gallons)	57,036 (C)	15.76% (D)	11.20%					
Forecasted 2018 - City (000 gallons) treated	361,795 (C)	100.00%						

(A) O&M and A&G expense amounts used are per the 2017 Budget and 2018 Forecasted amounts based on inflation and rate normalization.

(B) Administrative and general expenses are allocated based on the allocation of direct O&M expenses

(C) Forecasted volumes used are per April 2016 - March 2017 actual usage.

(D) O&M allocated to Fall River based on a percentage of gallons treated. Prior study percentage was 23%.

(E) O&M allocated to Elba in prior study was 1.06%.

(F) Elba forecasted volume is determined using a 3 year average from 2014 - 2016, reduced by 15% for city customers passing through Elba flow meter.

**COLUMBUS SEWER UTILITY**

Summary of Cost of Service  
Costs Allocated to Columbus  
Test Year 2018

	Allocation Basis	Forecasted 2018 Costs	Volume	BOD	SS	TKN	Phosph	Demand	Customer Costs
Operation and maintenance expenses	Detailed schedule	\$ 717,400	\$ 265,885	\$ 117,745	\$ 90,799	\$ 20,463	\$ 16,745	\$ 57,315	\$ 148,448
Treatment plant replacement fund	Treatment plant	132,200	43,373	29,196	27,871	8,718	10,020	859	12,163
Collection system replacement fund	Collection system plant	118,600	100,810	-	194	-	-	17,207	389
Pump replacement fund	Pumping equipment plant	24,500	20,825	-	-	-	-	3,675	-
Debt Service									
2007 Clean Water Fund Loan	Collection System	143,400	121,890	-	235	-	-	20,805	470
2017 General Obligation bonds	Collection System	78,600	66,810	-	129	-	-	11,404	258
2010 Clean Water Fund Loan	Treatment Plant	82,200	26,969	18,154	17,330	5,420	6,230	534	7,563
2017 Revenue Bonds	Collection System	131,800	112,030	-	216	-	-	19,122	432
Less other revenues	Above allocations	(128,200)	(68,070)	(14,814)	(12,273)	(3,105)	(2,961)	(11,748)	(15,229)
Fall River High Strength Adjustment	Historical charges	(40)	-	(10)	(20)	-	(10)	-	-
Rate Stabilization Adjustment	Existing Rate Structure (A)	-	(205,000)	-	-	-	-	-	205,000
Allocated costs		<u>\$ 1,300,460</u>	<u>\$ 485,522</u>	<u>\$ 150,271</u>	<u>\$ 124,480</u>	<u>\$ 31,496</u>	<u>\$ 30,024</u>	<u>\$ 119,173</u>	<u>\$ 359,493</u>

(A) To maintain consistency in overall rate design.

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



**COLUMBUS SEWER UTILITY**  
Calculation of Columbus Volume Charge  
Forecasted 2018

Estimated 2018 revenue requirement (from schedule 4)

Volume						\$	485,522
BOD							150,271
SS							124,480
TKN							31,496
Phosphorous							30,024
						\$	<u>821,793</u>

		Domestic						
Estimated 2018 loadings:								
Total Volume	145,462	ccf	x	100	x	7.48	=	108,806 000/gal
BOD								
Domestic	108,806		x	0.00834	x	220 mg/l	=	199,637 Lbs
SS								
Domestic	108,806		x	0.00834	x	200 mg/l	=	181,488 Lbs
TKN								
Domestic	108,806		x	0.00834	x	75 mg/l	=	68,058 Lbs
Phosphorous								
Domestic	108,806		x	0.00834	x	13 mg/l	=	11,797 Lbs
Unit Costs:								
Volume per 1000 gal				485,522	/	108,806	=	\$ 4.462
BOD per pound				150,271	/	199,637	=	\$ 0.753
SS per pound				124,480	/	181,488	=	\$ 0.686
TKN per pound				31,496	/	68,058	=	\$ 0.463
P per pound				30,024	/	11,797	=	\$ 2.545

Calculated Domestic Strength Rates:

Volume						=	\$	4.46
BOD	220	mg/l	0.00834	x	0.753	=		1.38
SS	200	mg/l	0.00834	x	0.685885	=		1.14
TKN	75	mg/l	0.00834	x	0.462781	=		0.29
P	13	mg/l	0.00834	x	2.545111	=		0.28

COST BASED RATE PER 1000 GALLONS

\$ 7.55

COST BASED RATE PER 100 CUBIC FEET

7.55 x 0.748 = \$ 5.65

Calculated High Strength Rates (for amounts above domestic strength only)

BOD per lb	150,271	/	199,637	=	\$	0.753
SS per lb	124,480	/	181,488	=	\$	0.686
TKN per lb	31,496	/	68,058	=	\$	0.463
P per lb	30,024	/	11,797	=	\$	2.545

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

**COLUMBUS SEWER UTILITY**  
 Calculation of Columbus Monthly Minimum Charge  
 Forecasted 2018

Meter Size	Customers	Demand Ratio	Equivalent Meters	Demand Factor	Monthly Demand Charge	Monthly Customer Cost	Computed Monthly Charge	Proposed Monthly Charge	Annual Revenue
5/8" & 3/4"	2,156	1.0	2,156	\$ 39.26	\$ 3.27	\$ 12.45	\$ 15.72	\$ 15.70	\$ 406,190
1"	56	2.5	140	39.26	8.18	12.45	20.63	21.00	14,112
1 1/4"	1	3.7	4	39.26	12.11	12.45	24.55	25.00	300
1 1/2"	30	5.0	150	39.26	16.36	12.45	28.80	29.00	10,440
2"	32	8.0	256	39.26	26.17	12.45	38.62	39.00	14,976
3"	5	15.0	75	39.26	49.08	12.45	61.52	62.00	3,720
4"	4	25.0	100	39.26	81.79	12.45	94.24	94.00	4,512
6"	0	50.0	0	39.26	163.58	12.45	176.03	176.00	-
	<u>2,284</u>		<u>2,881</u>						<u>\$ 454,250</u>

Demand Related Costs:

Summary of Cost of Service Study

From Schedule 4

\$ 119,173

Less:

MasterUnits

(6,087)

Total Demand Costs

113,086 / 2,881 / 12 = 3.27

Customer Costs:

Summary of Cost of Service Study

From Schedule 4

359,493

Less:

MasterUnits

(18,360)

Total Customer Costs

341,133 / 2,284 / 12 = 12.45

Costs to be recovered from  
 monthly minimum charge

\$ 454,219

Master Unit charges split proportionately between demand and customer.

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

**COLUMBUS SEWER UTILITY**  
 Revenue Analysis - Cost Based Rates  
 Forecasted 2018

Volume Charge	Authorized Rates	Residential		Commercial		Industrial		Public Authority		Total						
		Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue					
	\$ 5.65 /100 ccf	92,535	\$ 522,823	45,365	\$ 256,309	4,555	\$ 25,735	3,008	\$ 16,995	145,462	\$ 821,863					
Meter Charge		Meters	Billings	Revenues	Meters	Billings	Revenues	Meters	Billings	Revenues	Meters	Billings	Revenues	Meters	Billings	Revenues
5/8 & 3/4	\$ 15.70 /Month	1,979	23,748	\$ 372,844	160	1,920	\$ 30,144	3	36	\$ 565	14	168	\$ 2,638	2,156	25,872	\$ 406,190
1	21.00 /Month	10	120	2,520	43	516	10,836	2	24	504	1	12	252	56	672	14,112
1-1/4	25.00 /Month	1	12	300	0	0	0	0	0	0	0	0	0	1	12	300
1-1/2	29.00 /Month	0	0	0	24	288	8,352	2	24	696	4	48	1,392	30	360	10,440
2	39.00 /Month	0	0	0	22	264	10,296	1	12	468	9	108	4,212	32	384	14,976
3	62.00 /Month	0	0	0	4	48	2,976	1	12	744	0	0	0	5	60	3,720
4	94.00 /Month	0	0	0	2	24	2,256	0	0	0	2	24	2,256	4	48	4,512
Master Units	7.25 /Unit	0	0	0	281	3,372	24,447	0	0	0	0	0	0	281	3,372	24,447
Sub-total		<u>1,990</u>	<u>23,880</u>	<u>375,664</u>	<u>536</u>	<u>6,432</u>	<u>89,307</u>	<u>9</u>	<u>108</u>	<u>2,977</u>	<u>30</u>	<u>360</u>	<u>10,750</u>	<u>2,565</u>	<u>30,780</u>	<u>478,697</u>
Total Revenues Per Analysis				\$ <u>898,486</u>			\$ <u>345,616</u>			\$ <u>28,712</u>			\$ <u>27,745</u>			\$ <u>1,300,560</u>
Totals Rounded				\$ <u>898,500</u>			\$ <u>345,600</u>			\$ <u>28,700</u>			\$ <u>27,700</u>			\$ <u>1,300,600</u>

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

**COLUMBUS SEWER UTILITY**  
Repayment Schedules

	2007 Clean Water Fund Loan			2017 General Obligation bonds (2007 GO refunding)*			2010 Clean Water Fund Loan			2017 Revenue Bonds			Total Debt Service		
	Principal	Interest	Total	Principal	Interest	Total	Principal	Interest	Total	Principal	Interest	Total	Principal	Interest	Total
2017	\$ 110,741	\$ 32,801	\$ 143,542	\$ 65,000	\$ 33,020	\$ 98,020	\$ 58,712	\$ 24,380	\$ 83,092	\$ -	\$ 32,641	\$ 32,641	\$ 234,453	\$ 122,842	\$ 357,295
2018	113,482	30,026	143,508	70,000	13,375	83,375	60,121	22,954	83,075	75,000	56,243	131,243	318,603	122,597	441,200
2019	116,290	27,183	143,473	70,000	11,975	81,975	61,564	21,494	83,057	75,000	55,193	130,193	322,854	115,844	438,698
2020	119,169	24,269	143,438	70,000	10,575	80,575	63,041	19,998	83,040	80,000	53,948	133,948	332,210	108,790	441,000
2021	122,119	21,283	143,402	65,000	9,144	74,144	64,554	18,467	83,022	80,000	52,508	132,508	331,673	101,402	433,075
2022	125,141	18,223	143,364	65,000	7,681	72,681	66,104	16,899	83,003	80,000	50,908	130,908	336,245	93,711	429,956
2023	128,239	15,088	143,327	65,000	6,219	71,219	67,690	15,294	82,984	85,000	49,093	134,093	345,929	85,693	431,622
2024	131,412	11,876	143,288	70,000	4,613	74,613	69,315	13,650	82,964	85,000	47,095	132,095	355,727	77,234	432,960
2025	134,665	8,583	143,248	70,000	2,863	72,863	70,978	11,966	82,945	85,000	44,970	129,970	360,643	68,382	429,026
2026	137,997	5,208	143,205	75,000	994	75,994	72,682	10,242	82,924	90,000	42,648	132,648	375,679	59,092	434,771
2027	141,415	1,750	143,165	-	-	-	74,426	8,477	82,903	90,000	40,128	130,128	305,841	50,355	356,196
2028	-	-	-	-	-	-	76,212	6,669	82,882	95,000	37,443	132,443	171,212	44,112	215,324
2029	-	-	-	-	-	-	78,041	4,818	82,860	100,000	34,518	134,518	178,041	39,336	217,377
2030	-	-	-	-	-	-	79,914	2,923	82,837	100,000	31,418	131,418	179,914	34,340	214,254
2031	-	-	-	-	-	-	81,832	982	82,814	105,000	28,138	133,138	186,832	29,119	215,952
2032	-	-	-	-	-	-	-	-	-	110,000	24,560	134,560	110,000	24,560	134,560
2033	-	-	-	-	-	-	-	-	-	115,000	20,679	135,679	115,000	20,679	135,679
2034	-	-	-	-	-	-	-	-	-	115,000	16,568	131,568	115,000	16,568	131,568
2035	-	-	-	-	-	-	-	-	-	120,000	12,220	132,220	120,000	12,220	132,220
2036	-	-	-	-	-	-	-	-	-	125,000	7,500	132,500	125,000	7,500	132,500
2037	-	-	-	-	-	-	-	-	-	125,000	2,500	127,500	125,000	2,500	127,500
Totals	\$ 1,380,670	\$ 196,290	\$ 1,576,960	\$ 685,000	\$ 100,459	\$ 785,459	\$ 1,045,186	\$ 199,215	\$ 1,244,401	\$ 1,935,000	\$ 740,912	\$ 2,675,912	\$ 5,045,856	\$ 1,236,876	\$ 6,282,733
5 Year Average	\$ 119,240	\$ 24,197	\$ 143,437	\$ 68,000	\$ 10,550	\$ 78,550	\$ 63,077	\$ 19,963	\$ 83,039	\$ 78,000	\$ 53,760	\$ 131,760	\$ 328,317	\$ 108,469	\$ 436,786

\* - The 2007 GO bonds were refunded in 2017 after the 2017 debt service payment was made. The 2017 principal payment represents the 2007 GO bonds, while the remaining principal and interest represent the 2017 GO debt. The 2017 interest payment is the total of both issues.

**COLUMBUS SEWER UTILITY**  
 Allocation of Detailed Operation and Maintenance Expenses  
 City of Columbus Share Only  
 Forecasted 2018

	Forecasted 2018	Allocation Percentages							Allocated Costs						
		Vol	BOD	SS	TKN	Phosph	Demand	Cust. Costs	Vol	BOD	SS	TKN	Phosph	Demand	Cust. Costs
<b>Operating Expenses</b>															
Supervision and labor	\$ 56,708	21	21	14	7	7	15	15	\$ 11,908	\$ 11,909	\$ 7,939	\$ 3,970	\$ 3,970	\$ 8,506	\$ 8,506
Employee pensions & benefits	30,645	21	21	14	7	7	15	15	6,436	6,435	4,290	2,145	2,145	4,597	4,597
Power and fuel for aeration equipment	11,075	35	25	10	25	5	0	0	3,875	2,769	1,108	2,769	554	-	-
Power for pumping equipment	68,283	60	20	15	0	0	0	5	40,970	13,657	10,242	-	-	-	3,414
Chlorine	25,647	50	40	5	0	0	0	5	12,824	10,259	1,282	-	-	-	1,282
Transportation	5,579	36	27	18	4.5	4.5	0	10	2,009	1,506	1,004	251	251	-	558
Other operating supplies & expense	27,480	36	27	18	4.5	4.5	0	10	9,892	7,420	4,946	1,237	1,237	-	2,748
<b>Total Operating Expenses</b>	<b>225,417</b>								<b>87,914</b>	<b>53,955</b>	<b>30,811</b>	<b>10,372</b>	<b>8,157</b>	<b>13,103</b>	<b>21,105</b>
<b>Sludge Processing</b>															
Operation - labor	12,991	40	20	40	0	0	0	0	5,197	2,598	5,196	-	-	-	-
Employees pensions & benefits	6,995	40	20	40	0	0	0	0	2,798	1,399	2,798	-	-	-	-
Repairs and maintenance	6,912	40	20	40	0	0	0	0	2,765	1,382	2,765	-	-	-	-
Chemicals	4,330	40	20	40	0	0	0	0	1,732	866	1,732	-	-	-	-
<b>Total Sludge Processing</b>	<b>31,228</b>								<b>12,492</b>	<b>6,245</b>	<b>12,491</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Maintenance Expenses</b>															
<b>Maint. of sewage collection system</b>															
Supervision and labor	18,900	50	0	5	0	0	20	25	9,450	-	945	-	-	3,780	4,725
Employees pensions & benefits	10,400	50	0	5	0	0	20	25	5,200	-	520	-	-	2,080	2,600
Other	57,800	50	0	5	0	0	20	25	28,900	-	2,890	-	-	11,560	14,450
<b>Collection system pumping equipment</b>															
Supervision and labor	5,400	85	0	5	0	0	0	10	4,590	-	270	-	-	-	540
Employees pensions & benefits	2,900	85	0	5	0	0	0	10	2,465	-	145	-	-	-	290
Other	17,100	85	0	5	0	0	0	10	14,535	-	855	-	-	-	1,710
<b>Treatment and disposal equipment</b>															
Supervision and labor	38,388	36	27	18	4.5	4.5	0	10	13,820	10,365	6,910	1,727	1,727	-	3,839
Employees pensions & benefits	20,818	36	27	18	4.5	4.5	0	10	7,494	5,621	3,747	937	937	-	2,082
Other	30,728	36	27	18	4.5	4.5	0	10	11,061	8,297	5,531	1,383	1,383	-	3,073
<b>Structures and equipment</b>															
Supervision and labor	14,406	36	27	18	4.5	4.5	0	10	5,186	3,890	2,593	648	648	-	1,441
Employees pensions & benefits	7,744	36	27	18	4.5	4.5	0	10	2,789	2,091	1,394	348	348	-	774
Other	11,908	36	27	18	4.5	4.5	0	10	4,287	3,215	2,143	536	536	-	1,191
<b>Total Maintenance Expenses</b>	<b>236,492</b>								<b>109,777</b>	<b>33,479</b>	<b>27,943</b>	<b>5,579</b>	<b>5,579</b>	<b>17,420</b>	<b>36,715</b>

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

**COLUMBUS SEWER UTILITY**  
Allocation of Detailed Operation and Maintenance Expenses  
City of Columbus Share Only  
Forecasted 2018

	Forecasted 2018	Allocation Percentages						Cust. Costs	Allocated Costs						Cust. Costs	
		Vol	BOD	SS	TKN	Phosph	Demand		Vol	BOD	SS	TKN	Phosph	Demand		
Customer Accounts Expense																
Billing, collecting and accounting	\$ 73,800	0	0	0	0	0	20	80	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	14,760	\$ 59,040
Total Customer Accounts Expenses	<u>73,800</u>								<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>14,760</u>	<u>59,040</u>
Administrative and General Expenses																
Administrative and general salaries	56,571	37	16	13	3	2	8	21	20,932	9,051	7,354	1,697	1,131	4,526	11,880	
Office supplies and expenses	2,291	37	16	13	3	2	8	21	847	367	298	69	46	183	481	
Outside services	36,127	37	16	13	3	2	8	21	13,366	5,780	4,697	1,084	723	2,890	7,587	
Insurance expense	23,880	37	16	13	3	2	8	21	8,836	3,821	3,104	716	478	1,910	5,015	
Miscellaneous	2,115	37	16	13	3	2	8	21	784	338	275	63	42	169	444	
Economic development contribution	9,075	37	16	13	3	2	8	21	3,357	1,452	1,180	272	182	726	1,906	
Pensions and benefits	20,355	37	16	13	3	2	8	21	7,531	3,257	2,646	611	407	1,628	4,275	
Total Admin and General Expenses	<u>150,414</u>								<u>55,653</u>	<u>24,066</u>	<u>19,554</u>	<u>4,512</u>	<u>3,009</u>	<u>12,032</u>	<u>31,588</u>	
Total Operation and Maint Expenses	\$ <u>717,351</u>								\$ <u>265,836</u>	\$ <u>117,745</u>	\$ <u>90,799</u>	\$ <u>20,463</u>	\$ <u>16,745</u>	\$ <u>57,315</u>	\$ <u>148,448</u>	

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

**COLUMBUS SEWER UTILITY**

Allocation of Plant  
Forecasted 2018

	Forecasted Plant 2018	Allocation percentages							Allocated Costs						Customer Costs
		V	BOD	SS	TKN	Phos	Dem	CC	Volume	BOD	SS	TKN	Phos	Demand	
<b>Collection System Plant</b>															
Collecting mains	\$ 9,101,987	85	0	0	0	0	15	0	\$ 7,736,689	\$ -	\$ -	\$ -	\$ -	1,365,298	\$ -
Interceptor mains	1,134,532	85	0	0	0	0	15	0	964,352	-	-	-	-	170,180	-
Other collecting system equipment	535,643	85	0	0	0	0	15	0	455,297	-	-	-	-	80,346	-
<b>Total Collection System Plant</b>	<b>10,772,162</b>								<b>9,156,338</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1,615,824</b>	<b>-</b>
<b>Collection System Pumping Plant</b>															
Electric pumping equipment	864,621	85	0	0	0	0	15	0	734,928	-	-	-	-	129,693	-
Other power pumping equipment	14,414	85	0	5	0	0	0	10	12,252	-	721	-	-	-	1,441
Miscellaneous pumping equipment	14,876	85	0	5	0	0	0	10	12,645	-	744	-	-	-	1,488
<b>Total Collection System Pumping Plant</b>	<b>893,911</b>								<b>759,824</b>	<b>-</b>	<b>1,465</b>	<b>-</b>	<b>-</b>	<b>129,693</b>	<b>2,929</b>
									<i>85.00%</i>	<i>0.00%</i>	<i>0.16%</i>	<i>0.00%</i>	<i>0.00%</i>	<i>14.51%</i>	<i>0.33%</i>
<b>Treatment and Disposal Plant</b>															
Land and land rights	2,500	0	0	0	0	0	0	100	-	-	-	-	-	-	2,500
Structures and improvements	3,866,970	26	25	17	9	9	0	15	1,005,411	966,743	657,385	328,692	328,692	-	580,046
Preliminary sewage treatment equipment	1,811,020	45	10	40	0	0	0	5	814,959	181,102	724,408	-	-	-	90,551
Secondary treatment equipment	2,436,281	28	23	18	13	13	0	5	682,159	560,345	438,531	316,716	316,716	-	121,814
Advanced equipment	681,604	62	7	7	7	7	5	5	422,596	47,712	47,712	47,712	47,712	34,080	34,080
Sludge treatment & disposal equipment	1,216,252	3	48	33	1	10	0	5	36,486	583,802	401,363	12,163	121,625	-	60,813
Plant site piping	395,151	90	0	0	0	0	0	10	355,636	-	-	-	-	-	39,515
Flow metering and monitoring equipment	244,632	80	0	0	0	0	10	10	195,706	-	-	-	-	24,463	24,463
Other treatment and disposal equipment	456,285	29	25	16	6	6	3	15	132,322	114,071	73,006	27,377	27,377	13,689	68,443
<b>Total Treatment and Disposal Plant</b>	<b>11,110,695</b>								<b>3,645,275</b>	<b>2,453,775</b>	<b>2,342,405</b>	<b>732,660</b>	<b>842,122</b>	<b>72,232</b>	<b>1,022,225</b>
									<i>32.81%</i>	<i>22.08%</i>	<i>21.08%</i>	<i>6.59%</i>	<i>7.58%</i>	<i>0.65%</i>	<i>9.20%</i>
<b>General Plant</b>															
Transportation equipment	227,320	0	0	0	0	0	0	100	-	-	-	-	-	-	227,320
Office furniture and equipment	18,218	0	0	0	0	0	0	100	-	-	-	-	-	-	18,218
Other equipment	404,114	0	0	0	0	0	0	100	-	-	-	-	-	-	404,114
<b>Total General Plant</b>	<b>649,652</b>								<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>649,652</b>
<b>Total Wastewater Plant</b>	<b>\$ 23,426,420</b>								<b>\$ 13,561,437</b>	<b>\$ 2,453,775</b>	<b>\$ 2,343,870</b>	<b>\$ 732,660</b>	<b>\$ 842,122</b>	<b>\$ 1,817,749</b>	<b>\$ 1,674,806</b>
									<i>57.89%</i>	<i>10.47%</i>	<i>10.01%</i>	<i>3.13%</i>	<i>3.59%</i>	<i>7.76%</i>	<i>7.15%</i>

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

**COLUMBUS SEWER UTILITY**

Summary of Cost of Service  
 Costs Allocated to Elba  
 Forecasted 2018

	Forecasted 2018 Costs
	<u>                    </u>
Operation and maintenance expenses	\$ 5,600
Treatment plant replacement fund	1,500
Debt Service - 2010 CWFL	800
	<u>                    </u>
Allocated costs	<u>\$ 7,900</u>
Forecasted 2018 gallons (000) (4,100 reduced for 15% City flow) (A)	<u>3,485</u>
Cost per 1,000 gallons:	<u>\$ 2.27</u>

(A) Elba forecasted volume is determined from 3 year average from 2014 - 2016.



**COLUMBUS SEWER UTILITY**

Summary of Cost of Service  
 Fall River Rate Analysis  
 Forecasted 2018

This schedule provides an update for current forecasted costs to the analysis of the agreed upon rates as outlined in Exhibit C of the intergovernmental agreement with Fall River.

	Forecasted 2018 Costs
Operation and maintenance expenses	\$ 72,100
Administrative and general expenses	19,100
Treatment plant replacement fund	<u>22,700 (A)</u>
Allocated costs	<u><u>\$ 113,900</u></u>
Forecasted 2018 gallons (000)	<u><u>57,000</u></u>
Cost per 1,000 gallons (B):	<u><u>\$ 2.00</u></u>

(A) - Fall River's portion of the treatment plant replacement fund was allocated based on the method used in Exhibit C in the intergovernmental agreement.

(B) - The calculated rate associated with funding the treatment plant replacement fund is \$0.40 per 1,000 gallons. The remaining \$1.60 per 1,000 gallons relates to administrative and general and operation and maintenance costs.

**COLUMBUS SEWER UTILITY**Plant Additions and Retirements  
Forecasted 2017-2018

Account	Description	Financing	Additions	Retirements*	Year
2017 and 2018 Additions/Retirements					
313	James Street Sanitary Sewer Upgrades - Engineering	Debt Financing	\$ 1,211,337	\$ 34,026	2017
323	Transit Lift Station (Controls & Pumps)	Debt Financing	40,000	11,135	2017
323	Commercial Lift Station (Pumps)	Debt Financing	21,000	5,846	2017
323	Kiwanis Lift Station - Pumps, Valves, Mixing, & Pumping/Generator	Debt Financing	240,000	87,187	2017
323	West Side Lift Station (Pump Controls, Pumps and Wet Well Flushing)	Debt Financing	82,500	29,970	2017
323	Birdsey Lift Station (Pumps)	Debt Financing	15,000	4,176	2017
316	Hughes Lift Station Replacement	Debt Financing	114,235	38,078	2017
316	Hughes Lift Station Replacement Forcemain Replacement	Debt Financing	169,602	17,627	2017
312	Hwy 89/Farnham Street Upgrade and Engineering	Collection System Replacement Fund	16,819	5,606	2017
316	Hwy 16/151 Interchange	Collection System Replacement Fund	10,000	3,333	2017
312	Street Projects - School & Water Street	Collection System Replacement Fund	192,500	5,407	2017
341	Clarifier Building - Deck	Equipment Replacement Fund	175,000	62,079	2017
379	Solids Building HVAC (Garage/Shop, Belt Press Room)	Equipment Replacement Fund	220,000	78,042	2018
334	Filtration Building - Sludge Holding Tank Blowers	Equipment Replacement Fund	250,000	68,361	2018
373	Vactor Truck	General Cash	150,000	-	2018
Totals			<u>\$ 2,907,993</u>	<u>\$ 450,874</u>	

\* - Retirement values were estimated based on a Handy Whittman Index.

**Financing Sources**

Collection System Replacement Fund	\$ 219,319
Pump Replacement Fund	-
Equipment Replacement Fund	645,000
Cash & debt financing	<u>2,043,674</u>
Total Financing Sources	<u>\$ 2,907,993</u>

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

**COLUMBUS SEWER UTILITY**

Plant in Service  
Forecasted 2017 - Forecasted 2018

		Plant 12/31/2016	2017 Estimated Additions	2017 Estimated Retirements	2018 Estimated Additions	2018 Estimated Retirements	Ending Balance
<b>Collecting System Plant</b>							
Collecting mains	313	\$ 7,924,676	\$ 1,211,337	\$ 34,026	\$ -	\$ -	9,101,987
Interceptor mains	312	936,226	209,319	11,013	-	-	1,134,532
Other collecting system equipment	316	300,845	293,837	59,039	-	-	535,643
Total General Plant		<u>9,161,747</u>	<u>1,714,493</u>	<u>104,078</u>	<u>-</u>	<u>-</u>	<u>10,772,162</u>
<b>Collection System Pumping Plant</b>							
Electric pumping equipment	323	604,435	398,500	138,314	-	-	864,621
Other power pumping equipment	324	14,414	-	-	-	-	14,414
Miscellaneous pumping equipment	325	14,876	-	-	-	-	14,876
Total Collection System Pumping Plant		<u>633,725</u>	<u>398,500</u>	<u>138,314</u>	<u>-</u>	<u>-</u>	<u>893,911</u>
<b>Treatment and Disposal Plant</b>							
Land and land rights	330	2,500	-	-	-	-	2,500
Structures and improvements	331	3,866,970	-	-	-	-	3,866,970
Preliminary sewage treatment equipment	332	1,811,020	-	-	-	-	1,811,020
Secondary treatment equipment	334	2,254,642	-	-	250,000	68,361	2,436,281
Advanced equipment	335	681,604	-	-	-	-	681,604
Sludge treatment & disposal equipment	337	1,216,252	-	-	-	-	1,216,252
Plant site piping	338	395,151	-	-	-	-	395,151
Flow metering and monitoring equipment	339	244,632	-	-	-	-	244,632
Other treatment and disposal equipment	341	343,364	175,000	62,079	-	-	456,285
Total Treatment and Disposal Plant		<u>10,816,135</u>	<u>175,000</u>	<u>62,079</u>	<u>250,000</u>	<u>68,361</u>	<u>11,110,695</u>
<b>General Plant</b>							
Furniture and fixtures	372	18,218	-	-	-	-	18,218
Transportation equipment	373	77,320	-	-	150,000	-	227,320
Other equipment	379	262,156	-	-	220,000	78,042	404,114
Total General Plant		<u>357,694</u>	<u>-</u>	<u>-</u>	<u>370,000</u>	<u>78,042</u>	<u>649,652</u>
Total Wastewater Plant		\$ <u>20,969,301</u>	\$ <u>2,287,993</u>	\$ <u>304,471</u>	\$ <u>620,000</u>	\$ <u>146,403</u>	\$ <u>23,426,420</u>

Collection System Replacement Calculations

	2017	2018
Average Balance	\$ <u>8,513,300</u>	\$ <u>8,513,300</u>

Additions based on historical totals.

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

**COLUMBUS SEWER UTILITY**  
Pump Replacement Fund

Description	Year Installed	Original Cost	Account Code	Service Life
West Side Station	1950	\$ 50,000	323	50 years
	1996	47,191	323	20 years
	1998	11,121	323	50 years
	1998	<u>8,234</u>	323	20 years
sub-total		116,546		
Less: retired		<u>(8,300)</u>		
sub-total		108,246		
Hughes Station	1992	<u>33,449</u>	323	50 years
Birdsey Station	1950	1,640	323	50 years
	1985	22,312	323	20 years
	1989	<u>7,500</u>	323	20 years
sub-total		31,452		
Mexico Station	1950	15,000	323	50 years
	1983	<u>18,235</u>	323	20 years
sub-total		33,235		
Whitney Station	2000	<u>25,000</u>	323	20 years
Kiwanis Station	1979	66,800	323	50 years
	1986	<u>3,032</u>	323	20 years
sub-total		69,832		
Waterloo Station	2000	25,000	323	20 years
	2005	<u>61,028</u>	323	20 years
sub-total		86,028		
Less: retired		<u>(10,676)</u>		
sub-total		75,352		

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

**COLUMBUS SEWER UTILITY**  
Pump Replacement Fund

Description	Year Installed	Original Cost	Account Code	Service Life
Industrial Park	1985	\$ 15,100	323	20 years
	1999	19,572	323	20 years
Less: retired		<u>(7,500)</u>		
sub-total		27,172		
Commercial	1986	21,484	323	50 years
	1999	<u>3,275</u>	323	20 years
sub-total		24,759		
Dix Street Project	2003	3,881	323	20 years
Whitney St. lift station installation & equipment	2001	21,395	323	20 years
Krestal Ridge 2 Lift Station/Force Main	2006	82,612	323	20 years
2007 Activity	2007	0	323	n/a
2008 Activity	2008	0	323	n/a
2009 Activity - Retirement of William St. Station	2009	(42,500)	323	n/a
2010 Activity - Wondra Construction Lift Station Project	2010	51,615	323	20 years
2011 Activity	2011	0	323	n/a
2012 Activity	2012	0	323	n/a
2013 Activity	2013	0	323	n/a
2014 Activity - Control Panel Upgrade	2014	66,133	323	20 years
Small Pump Project		4,760	323	20 years
Less: retired		<u>(25,466)</u>		
		45,427		
2015 Activity	2015	13,508	323	20 years
2016 Activity	2016	0	323	n/a
Estimated 2017 and 2018 Activity	2017/2018	0	323	n/a
TOTAL		\$ <u>604,435</u>		
Total 20 Year			\$ <u>413,241</u>	
Computed Annual Replacement Requirement 5.00%			\$ <u>20,662</u>	
Proposed Annual Replacement Requirement			\$ <u>20,700</u>	
Total 50 Year			\$ <u>191,194</u>	
Computed Annual Replacement Requirement 2.00%			\$ <u>3,824</u>	
Proposed Annual Replacement Requirement			\$ <u>3,800</u>	
Total Requested Replacement Requirement			\$ <u>24,500</u>	

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

**COLUMBUS SEWER UTILITY**  
Wastewater Treatment Plant Replacement Costs

Description	Year in Service	Total Cost (\$)	Depreciation*	
			(%)	(\$)
Flushing water pumps	1984	\$ 7,400	0	\$ -
Flushing water pumps	2010	7,300	4.00	292
Aeration basin blowers	2013	150,000	4.00	6,000
Return sludge pumps	1984	30,320	0	-
Aeration Diffusers	2013	75,000	6.67	5,000
Scum pumps	1984	21,500	0	-
Clarifier equipment	1984	100,900	0	-
Sludge storage blowers	1984	64,500	0	-
Submersible pumps	1984	10,300	0	-
Air compressor	1984	18,706	0	-
Sludge haul vehicle	1984	77,000	3.33	2,567
Filter influent pumps	1984	63,200	0	-
Filter backwash pumps	1984	49,150	0	-
Backwash waste pumps	1984	20,000	0	-
Backwash waste pumps	2013	14,390	5.00	720
Filter blowers	1984	21,500	0	-
Post aeration equipment	1984	20,250	0	-
Equipment instrumentation - blending system	2011	50,000	6.67	3,333
Equipment instrumentation - aeration system	2013	90,000	6.67	6,000
Emergency generator	1984	33,454	0	-
Bar screen and compactor	1996	170,000	0	-
Influent flow meter (14" and 10")	2011	10,000	6.67	667
Belt filter press	1996	184,836	5.00	9,242
Chemical Feed Equipment	2011	20,000	6.67	1,333
Phosphorous removal	1996	35,000	0	-
Trailer mounted pump	1993	14,414	5.00	721
Trash pumps	1995	14,870	5.00	744
Sampler	1997	6,500	0	-
Sampler	2010	6,500	6.67	433
Generators	1999	14,000	4.00	560
Steamer	1999	5,381	5.00	269
Jet-Vac	2006	200,000	5.00	10,000
SCADA equipment and system	2000	187,000	6.67	12,467
SCADA equipment and system - blending system	2011	50,000	6.67	3,333
Step Screen	2009	220,000	6.67	14,667
RAS-WAS Flower Meter	2007	5,000	6.67	333
Influent pumps	2011	100,000	5.00	5,000
Belt filter press feed pumps	2010	38,000	5.00	1,900
Tertiary sand filter valves	2010	150,000	6.67	10,000

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

**COLUMBUS SEWER UTILITY**  
Wastewater Treatment Plant Replacement Costs

Description	Year in Service	Total Cost (\$)	Depreciation	
			(%)	(\$)
Grit removal unit (Headcell)	2011	\$ 85,000	5.00	\$ 4,584
Grit removal unit (Teacup)	2011	85,000	5.00	4,250
Grit removal dewatering unit (Gritsnail)	2011	85,000	5.00	4,250
Plant Wide HVAC	1984	250,000	0	-
2012 Additions	2012	40,591	4.00	1,624
2013 Additions	2013	455,820	4.00	18,233
2014 Additions	2014	15,687	4.00	627
2015 Activity	2015	168,434	4.00	6,737
2016 Activity	2016	76,844	4.00	3,074
Estimated 2017 and 2018 Activity	2017/2018	645,000	4.00	25,800
Less: retired	2017/2018	(208,482)	4.00	(8,339)
Traditional Method Forecasted Test Year Funding		<u>\$ 4,055,265</u>		<u>\$ 156,400</u>

**Alternative Method from DNR**

	<u>2018</u>
2018 Mechanical Equipment Assets	\$ 4,055,265
Percent Required for ERF	<u>30%</u>
Required Minimum ERF Balance	1,216,580
12/31/2016 Equipment Replacement Fund Balance	406,973
Year-to-date deposits (1)	59,349
Expected remaining 2017 deposits (1)	88,551
2018 deposits (12 monthly deposits @ 12,000)	144,000
Forecasted uses of ERF Funds	<u>(645,000)</u>
Forecasted 12/31/2018 Balance	53,873
Over / (Under) Funding	<u>(1,162,700)</u>
Theoretical Alternative Method Forecasted Test Year Funding	<u>\$ 387,567</u>

(1) Year-to-date deposits per GL detail as of March 31, 2017. Management will deposit another \$10,000 per month until the minimum annual deposit amount of \$147,900 is met.

\*- Depreciation with a zero balance represents assets that are already fully depreciated.

**COLUMBUS SEWER UTILITY**  
Collection System Replacement Fund

Description	Year Installed	Length	Original Cost	Account Code
4"	1984	550'	\$ 3,572	313
	1940's	530'	(3,180)	313
	1999	1950'	16,868	313
	2007	99'	55,650	313
sub-total			72,910	
6"	1982	201'	9,602	313
		Retired	(3,700)	
	1984	rehab	2,206	313
	1985	144'	5,665	313
	1990*	rehab	14,000	313
	1998	1570'	4,356	313
	2007	52'	107,026	313
	2008	539'	16,709	313
	2010	630'	(12,600)	313
	sub-total			143,265
8"	1935	68033'	241,789	313
	1940's	4578'	(27,468)	313
	1940's	7378'	(59,024)	313
		Retired	(175,942)	313
	1979	rehab	5,187	313
	retired in 08	538'	(12,760)	313
	1960	956'	(9,560)	313
	1980	rehab	27,548	313
	1982	8859'	301,206	313
	1983	650.5'	18,097	313
	1984	1501'	58,002	313
	1985	1812'	73,777	313
	1986	1110'	44,165	313
	1987	234'	16,024	313
	1988	361'	21,501	313
	1989	1043'	87,355	313
	1990*	rehab	60,375	313
	1991**	rehab	106,476	313
	1991	Waterloo St	50,523	313
	1992	258'	29,664	313
	1993	937'	36,658	313
	1994		33,798	313
	1995	968'	71,240	313
	1997	1186'	58,659	313
	1999	4082'	100,808	313
	2000	815'	61,508	313
	2002	rehab	3,985	313
	2003	647'	156,466	313
	2004	Akins/Dix St	163,502	313
	2005	517'	86,822	313
	2006	2515'	47,407	313
	2006	956'	19,120	313
	2006	1253'	73,292	313
	2006	3213'	174,440	313
2006	956'	49,402	313	
2007	4578'	155,652	313	
2007	7541'	212,922	313	
	Retired	(5,170)	313	
2008	637'	18,825	313	
2008	300'	30,429	313	
2008	238'	9,044	313	
2008	300'	107,881	313	
2008	238'	9,044	313	
2008	1222'	75,288	313	
2008	325'	11,375	313	
sub-total			2,619,332	

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



**COLUMBUS SEWER UTILITY**  
Collection System Replacement Fund

Description	Year Installed	Length	Original Cost	Account Code
9"	1935	405'	\$ 2,081	313
10"	1935	12432'	77,964	313
	1940's	520	(3,120)	313
		Retired	(3,634)	
	1940's	1412'	(14,120)	313
	1979	rehab	29,386	313
	1980	rehab	9,935	313
	1982	1966'	78,130	313
	1983	337'	15,500	313
	1984	395'	9,671	313
	1985	564'	24,185	313
	1990*	rehab	26,100	313
	1998	1930'	128,830	313
	2006	1912'	146,182	313
	2007	1412	49,320	313
	2008	172'	27,868	313
	2008	1179'	<u>180,528</u>	313
sub-total			782,725	
12"	1935	10018'	71,495	313
	1940's	340'	(4,480)	313
	1979	rehab	17,496	313
	1980	rehab	19,859	313
	1982	349'	14,864	313
	2006	715'	45,750	313
	2006	625'	16,531	313
	2007	341'	<u>16,460</u>	313
sub-total			197,975	
15"	1935	2762'	21,868	313
	1980	rehab	2,235	313
	1982	638'	36,905	313
	2006	1641'	<u>91,619</u>	313
sub-total			152,627	
18"	1980	2033'	50,825	313
	1940's	352'	(8,382)	313
	1940's	18'	(288)	313
	1996	1967'	218,448	313
	2005	669'	192,919	313
	2007	352'	26,048	313
	2007	18'	2,070	313
		Retired	<u>(6,690)</u>	
			474,950	
21"	1974	2100'	<u>51,996</u>	313
27"	1996	1036'	<u>158,447</u>	313
2009 Activity		Additions	280,932	313
		Retirements	(14,397)	
2010 Activity		Additions	130,589	313
		Retirements	(4,650)	
2011 Activity		Additions	662,039	313
		Retirements	(5,740)	
2012 Activity		Additions	29,440	313
		Retirements	(14,720)	
2013 Activity		Additions	6,910	312
		Additions	203,991	313
		Retirements	-	
2014 & 2015 Activity		N/A		
2016 Activity		Additions	505,940	313
		Retirements	(51,472)	313
Forecasted 2017 and 2018 activity		Additions	219,319	312/316/323
		Retirements	<u>(14,347)</u>	
TOTAL			<u>\$ 6,590,144</u>	
Computed Annual Replacement Requirement 1.80%		***	<u>\$ 118,623</u>	
Proposed Annual Replacement Requirement			<u>\$ 118,600</u>	

\*\*\* - Used 1.8% as used in previous study

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

### COLUMBUS SEWER UTILITY

Monthly Bill Comparison  
Forecasted 2018

Customer	Meter	Volume (CCF)	PRESENT CHARGE			COST BASED CHARGE			CHANGE CURRENT TO COST BASED	
			Volume	Fixed	Total	Volume	Fixed	Total	\$	%
Residential	5/8"	3	\$16.08	\$15.60	\$31.68	\$16.95	\$ 15.70	\$32.65	\$0.97	3.06%
Residential (Average)*	5/8"	4	21.44	15.60	37.04	\$22.60	15.70	38.30	\$1.26	3.40%
Residential	5/8"	7	37.52	15.60	53.12	\$39.55	15.70	55.25	\$2.13	4.01%
Commercial	5/8"	10	53.60	15.60	69.20	\$56.50	15.70	72.20	\$3.00	4.34%
Commercial (Average)*	5/8"	15	80.40	15.60	96.00	\$84.75	15.70	100.45	\$4.45	4.64%
Commercial	1-1/2"	30	160.80	26.00	186.80	\$169.50	29.00	198.50	\$11.70	6.26%
Industrial (Average)*	1-1/2"	42	225.12	26.00	251.12	\$237.30	29.00	266.30	\$15.18	6.04%
Public Authority (Average)*	2"	8	42.88	34.00	76.88	\$45.20	39.00	84.20	\$7.32	9.52%
Public Authority (Large)	4"	107	573.52	80.00	653.52	\$604.55	94.00	698.55	\$45.03	6.89%

\* - Average monthly volume amounts were obtained from Schedule 2A.

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

## COLUMBUS SEWER UTILITY

Calculation of Septic Charges  
Forecasted 2018

	With Collection System 2018	Without Collection System 2018
	<u>                    </u>	<u>                    </u>
VOLUME	\$ 7.55	\$ 5.53
BOD		
(7,000 mg/l - 220 mg/l)	6,780	6,780
Rate x 8.34 conversion factor / 1000	<u>0.006273</u>	<u>0.006278</u>
Subtotal	<u>42.53</u>	<u>42.56</u>
SS		
(15,000 mg/l - 200 mg/l)	14,800	14,800
Rate x 8.34 conversion factor / 1000	<u>0.005700</u>	<u>0.005626</u>
Subtotal	<u>84.36</u>	<u>83.27</u>
TKN		
(1,500 mg/l - 75 mg/l)	1,425	1,425
Rate x 8.34 conversion factor / 1000	<u>0.003867</u>	<u>0.003860</u>
Subtotal	<u>5.51</u>	<u>5.50</u>
Phosphorus		
(250 mg/l - 13 mg/l)	237	237
Rate x 8.34 conversion factor / 1000	<u>0.021538</u>	<u>0.021226</u>
Subtotal	<u>5.10</u>	<u>5.03</u>
Total Rounded Septic Charge per 1000 Gallons	<u>\$ 145.00</u>	<u>\$ 142.00</u>
Present Rate	<u>\$ 162.00</u>	

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

**COLUMBUS SEWER UTILITY**Calculation of Septic Charges Without Collection System  
Forecasted 2018

	2018 Est. Cost of Service	Less Collection System Costs	Applicable Est. Cost of Service	Estimated Loadings	Unit Cost
Volume (B)	\$ 690,522	\$ (423,130) (A)	\$ 267,392	108,806	\$ 2.458
BOD	150,271	0	150,271	199,637	0.753
SS	124,480	(2,044) (A)	122,437	181,488	0.675
TKN	31,496	0	31,496	68,058	0.463
Phosphorus	30,024	0	30,024	11,797	2.545
<b>Total</b>	<b>\$ 1,026,794</b>		<b>\$ 601,620</b>		

(A) - Costs removed include; debt associated with the collection system, funding of the collection system account and operations and maintenance costs allocated to the collection system.

(B) - Rate Stabilization adjustment of \$205,000 was added back to the volume charges on this schedule. As these are actual costs incurred by the utility.

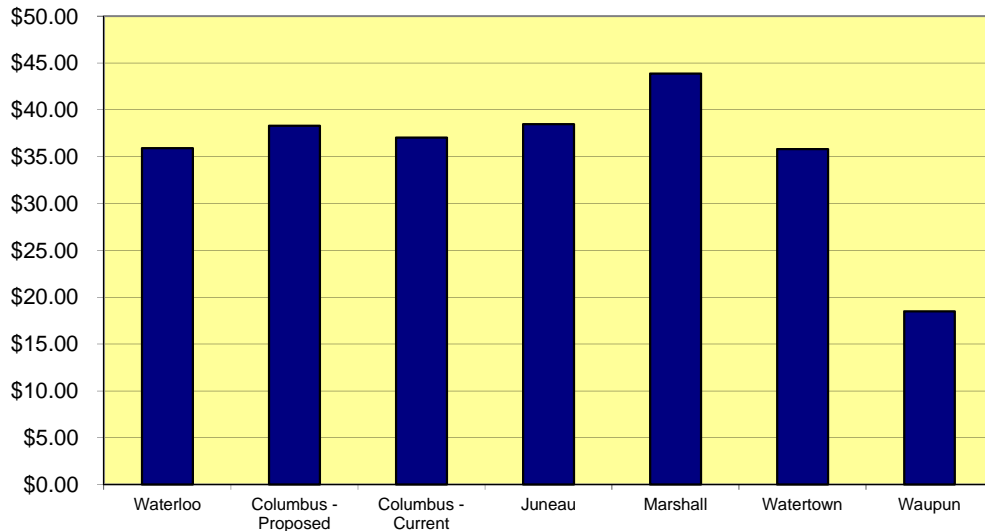
## Calculated Domestic Strength Rates:

Volume			2.46	=	\$ 2.46
BOD	220 mg/l	0.00834 x	0.75	=	1.38
SS	200 mg/l	0.00834 x	0.67	=	1.13
TKN	75 mg/l	0.00834 x	0.46	=	0.29
P	13 mg/l	0.00834 x	2.55	=	0.28

Proposed Rate Domestic Strength Per 1,000 Gallons

\$ 5.53

**COLUMBUS SEWER UTILITY**  
Average Residential Monthly Bill Comparison with Surrounding Communities



	Columbus		Waterloo	Marshall	Juneau	Waupun	Watertown
	Current Rate	Cost Based Rate 2018					
Volume per CCF	\$5.36	\$ 5.65	\$ 6.33	\$ 7.85	\$ 5.85	\$ 3.09	\$ 3.51
Monthly Customer Charge							
5/8" and 3/4"	15.60	15.70	10.61	12.48	15.09	6.13	21.78
1"	20.00	21.00	10.61	21.84	26.88	6.69	30.80
1-1/4"	23.00	25.00	10.61	29.20	36.29	-	-
1-1/2"	26.00	29.00	10.61	37.60	46.45	7.61	46.03
2"	34.00	39.00	10.61	56.30	69.92	8.72	64.38
3"	53.00	62.00	10.61	100.90	124.75	11.30	107.06
4"	80.00	94.00	10.61	-	203.05	14.99	229.12
6"	146.00	176.00	10.61	323.21	398.70	24.21	320.67
Average Monthly Resident (4 CCF)	\$ 37.04	\$ 38.30	\$ 35.93	\$ 43.88	\$ 38.49	\$ 18.49	\$ 35.82

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

**COLUMBUS SEWER UTILITY**

Debt Service Coverage  
Forecasted 2018

	<u>Current Rates</u>	<u>Cost Based Rates</u>
Operating Revenues	\$ 1,395,900	\$ 1,422,300
Other income	128,200	128,200
Less: Operation and maintenance expenses	<u>(814,100)</u>	<u>(814,100)</u>
Net Funds for Debt Service	<u>\$ 710,000</u>	<u>\$ 736,400</u>
Revenue bond debt service only(1)(2)	\$ 358,200	\$ 358,200
Coverage factor	<u>125%</u>	<u>125%</u>
Required Earnings	<u>\$ 447,800</u>	<u>\$ 447,800</u>
Actual Coverage Factor	<u>1.98</u>	<u>2.06</u>

(1) - Based on 5 year average debt service as shown on Schedule 8.

(2) - Note this excludes G.O. debt

**COLUMBUS SEWER UTILITY**  
Revenue Analysis - Elba  
Actual 4/1/16-3/31/17 Usage - Forecasted 2018

Volume Charge	Actual 12 months 3/31/17		Forecasted 2018	
	Units	Revenue	Units	Revenue
Rate Per 1,000 Gallons	\$ 2.84		\$ 2.27	
Total Revenues Per Analysis	<u>\$ 3,689</u>	\$ 10,477	<u>\$ 4,100 (A)</u>	\$ 9,294
Credit (15% for City Customers Passing Through Elba Flow Meter)		<u>(1,572)</u>		<u>(1,394)</u>
Net Revenues		<u>\$ 8,905</u>		<u>\$ 7,900</u>

(A) Forecasted 2018 gallons were determined from a 3 year average from 2014 - 2016 due to the wide variance in usage year to year for Elba. See Schedule 2A for a summary of historical usage for Elba.

**COLUMBUS SEWER UTILITY**

Revenue Analysis - Fall River  
 Forecasted 2018

Volume Charge	Actual 12 months 3/31/17		Forecasted 2018	
	Units	Revenue	Units	Revenue
Rate Per 1,000 Gallons	\$ 2.39		\$ 2.00	
Total Revenues Per Analysis	\$ 57,000	\$ 136,230	\$ 57,000 (A)	\$ 113,900

(A) - Forecasted 2018 usage is expected to remain consistent with the actual 12 months ending March 31, 2017.



**COLUMBUS SEWER UTILITY**

## Summary of O&amp;M Costs

Forecasted 2018 Compared to Forecasted 2016 - Current Fall River Rate Base

	Forecasted 2018 Amount	Current rate base Forecasted 2016 Amount
Operating Expenses		
Supervision and labor	\$ 68,100	\$ 68,250
Employee pensions & benefits	36,800	34,411
Power and fuel for pumping equipment	13,300	22,000
Power and fuel for aeration equipment	82,000	85,000
Chlorine	30,800	30,000
Transportations	6,700	6,000
Other operating supplies & expense	33,000	28,250
Total Operating Expenses	<u>270,700</u>	<u>273,911</u>
Sludge Processing		
Operation - labor	15,600	15,400
Employees pensions & benefits	8,400	7,784
Repairs and maintenance	8,300	6,800
Chemicals	5,200	6,000
Total Sludge Processing	<u>37,500</u>	<u>35,984</u>
Treatment and disposal equipment		
Supervision and labor	46,100	46,100
Employees pensions & benefits	25,000	23,225
Other	36,900	36,000
Buildings and Grounds		
Supervision and labor	17,300	17,100
Employees pensions & benefits	9,300	8,647
Other	14,300	25,000
Total Maintenance Expenses	<u>148,900</u>	<u>156,072</u>
Total Before Administrative & General Expenses	<u>\$ 457,100</u>	<u>\$ 465,967</u>
Administrative and general salaries	\$ 64,200	\$ 62,775
Office supplies and expenses	2,600	3,600
Outside services	41,000	94,850
Insurance expense	27,100	19,980
Miscellaneous	2,400	1,500
Economic development contribution	10,300	10,000
Pensions and benefits	23,100	18,570
Total Admin. and General Expenses	<u>170,700</u>	<u>211,275</u>
Total Operation & Maintenance Expenses	<u>\$ 627,800</u>	<u>\$ 677,242</u>

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