



CITY OF BURTON
BURTON CITY COUNCIL MEETING
AUGUST 6, 2018
AGENDA

Council Chambers

Workshop

6:00 PM

4303 S. CENTER ROAD
BURTON, MI 48519

A. CALL TO ORDER

B. STAFF PRESENT

C. ADMINISTRATIVE REPORT

D. PRESENTATION

1. The purpose of the workshop is the presentation on the Water and Sewer Rate Study by the Woodhill Group.

E. COUNCIL DISCUSSION

1. Water RateStudy



Burton City Council
4303 S. Center Road
Burton, MI 48519

Meeting: 08/06/18 06:00 PM
Department: Clerk's Office
Category: Water/Sewer
Prepared By: Bette Bigsby
Department Head: Bette Bigsby

D.1

SCHEDULED

PUBLIC HEARING (ID # 4005)

DOC ID: 4005

**The purpose of the workshop is the presentation on the
Water and Sewer Rate Study by the Woodhill Group.**



Burton City Council
4303 S. Center Road
Burton, MI 48519

Meeting: 08/06/18 06:00 PM
Department: Clerk's Office
Category: Discussion
Prepared By: Bette Bigsby
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E.1

SCHEDULED

INFORMATION ITEM (ID # 4111)

DOC ID: 4111

Water RateStudy

ATTACHMENTS:

- Water Sewer Rate Review - City Council w Adopted Budget (PPTX)

City of Burton Water & Sewer Rate Review

August 6, 2018

Presentation of Final Report Water and Sewer Rate Study

Presented to:

Members of the City Council

Mayor, Paula Zelenko

Members from the Department of DPW ;
and the City Controller

Presentation of Final Report Water and Sewer Rate Study

Presented By:

Colleen Coogan, CPA, CPFO

Keith Sawdon, CPFA

The WoodHill Group, LLC

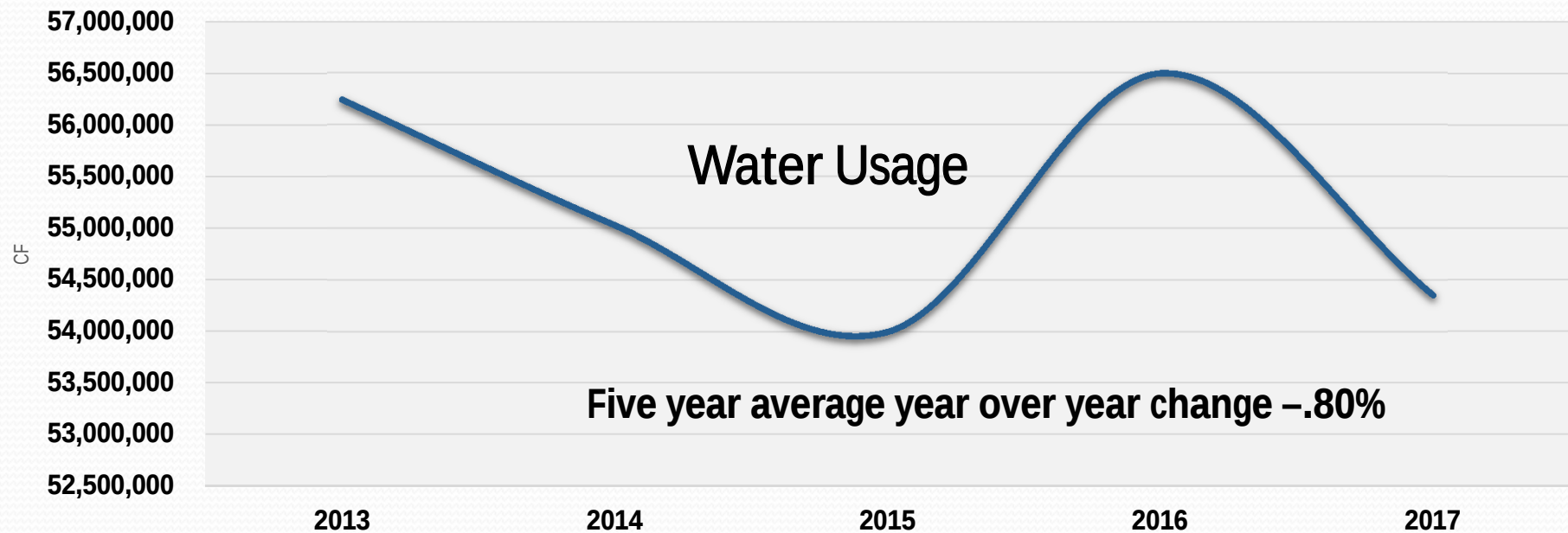
Approach to Water and Sewer Rate Review

- Review trends of the water and sewer system;
- Review of cost recovery methods, current rate structure and current costs;
- Review of current water and sewer rates to those needed for cost recovery for the coming rate period;
- Comparison of current vs. needed rate structure for the average residential customer;
- Formulate recommended billing structure to support cost recovery and transparency; and
- Provide City with rate setting policy(s) and supporting rate setting model

Trend Review

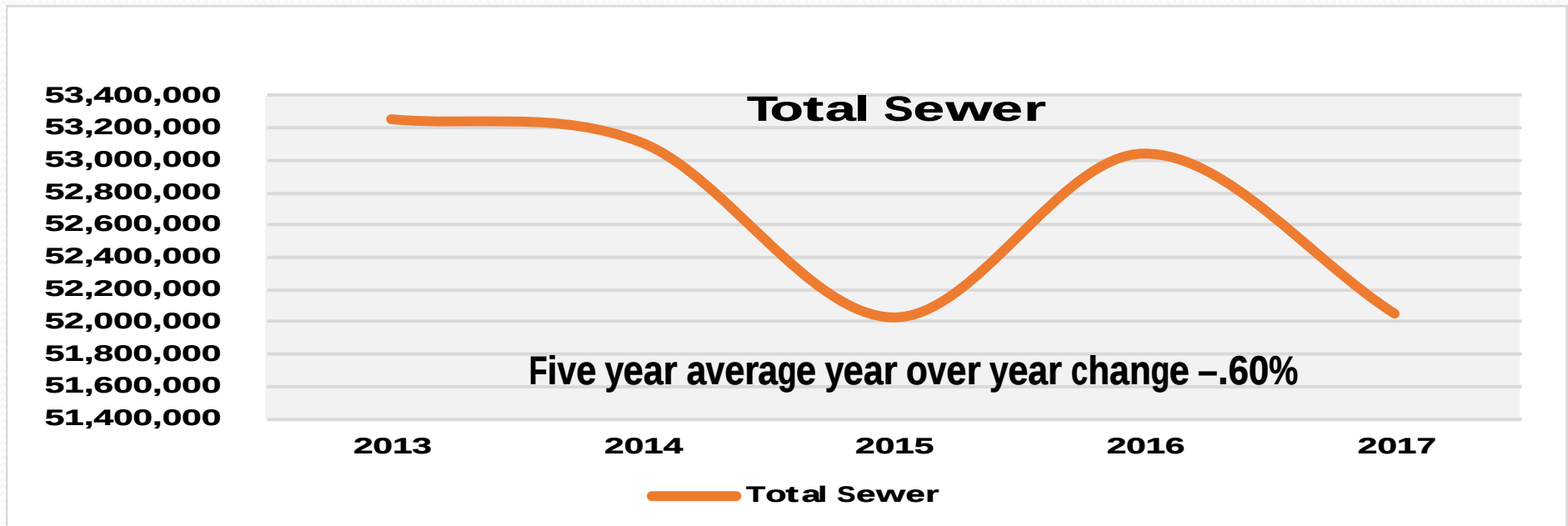
Water Unit Sales

Water Sales	Actual	Actual	Actual	Actual	Actual	Five Year Ave
	2013	2014	2015	2016	2017	
Water Sold (Units)	56,242,334	55,030,122	54,001,306	56,495,030	54,355,827	55,224,924
% Change in Water Sold		-2.2%	-1.9%	4.6%	-3.8%	-0.8%

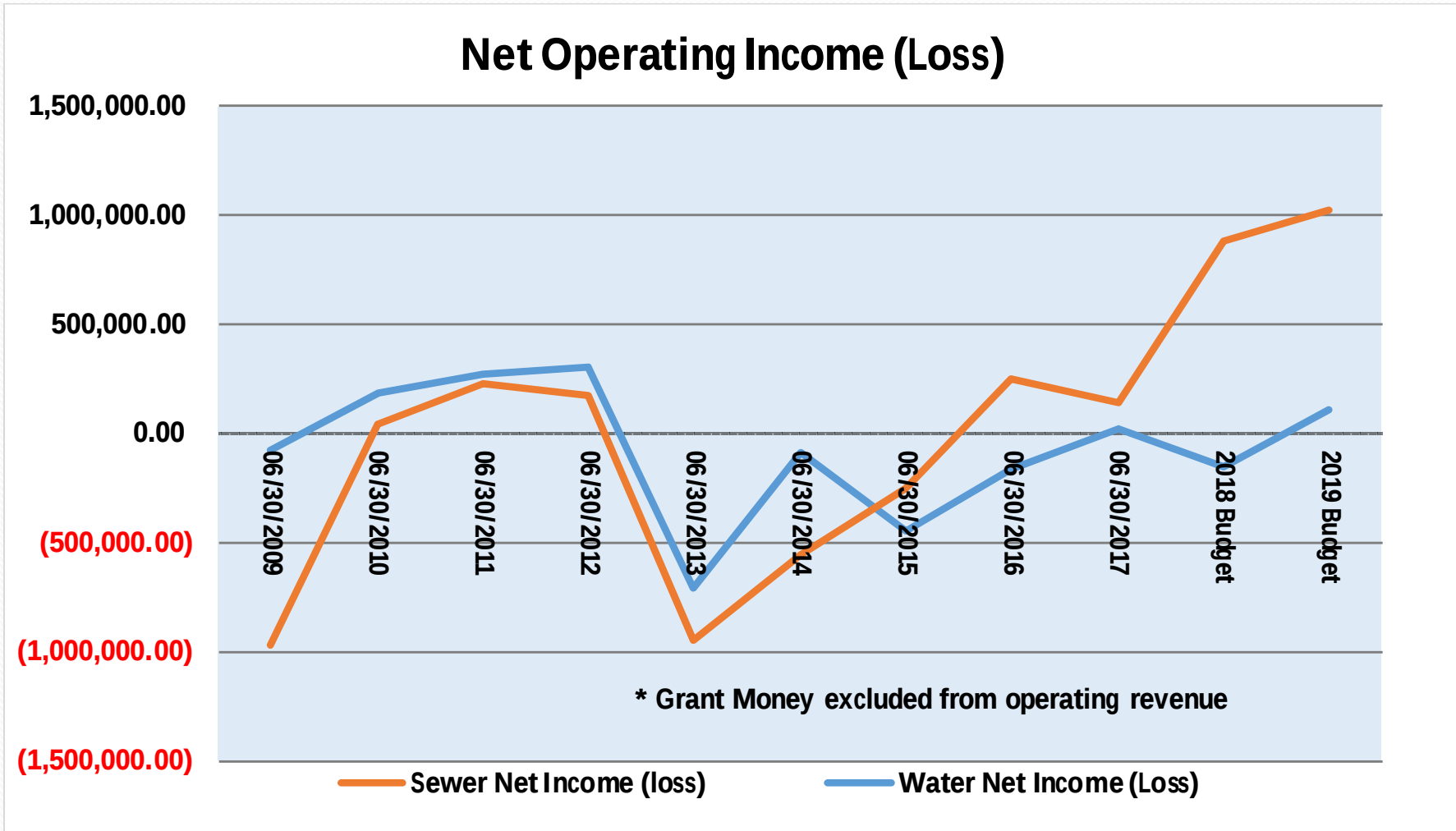


Sewer Unit Sales

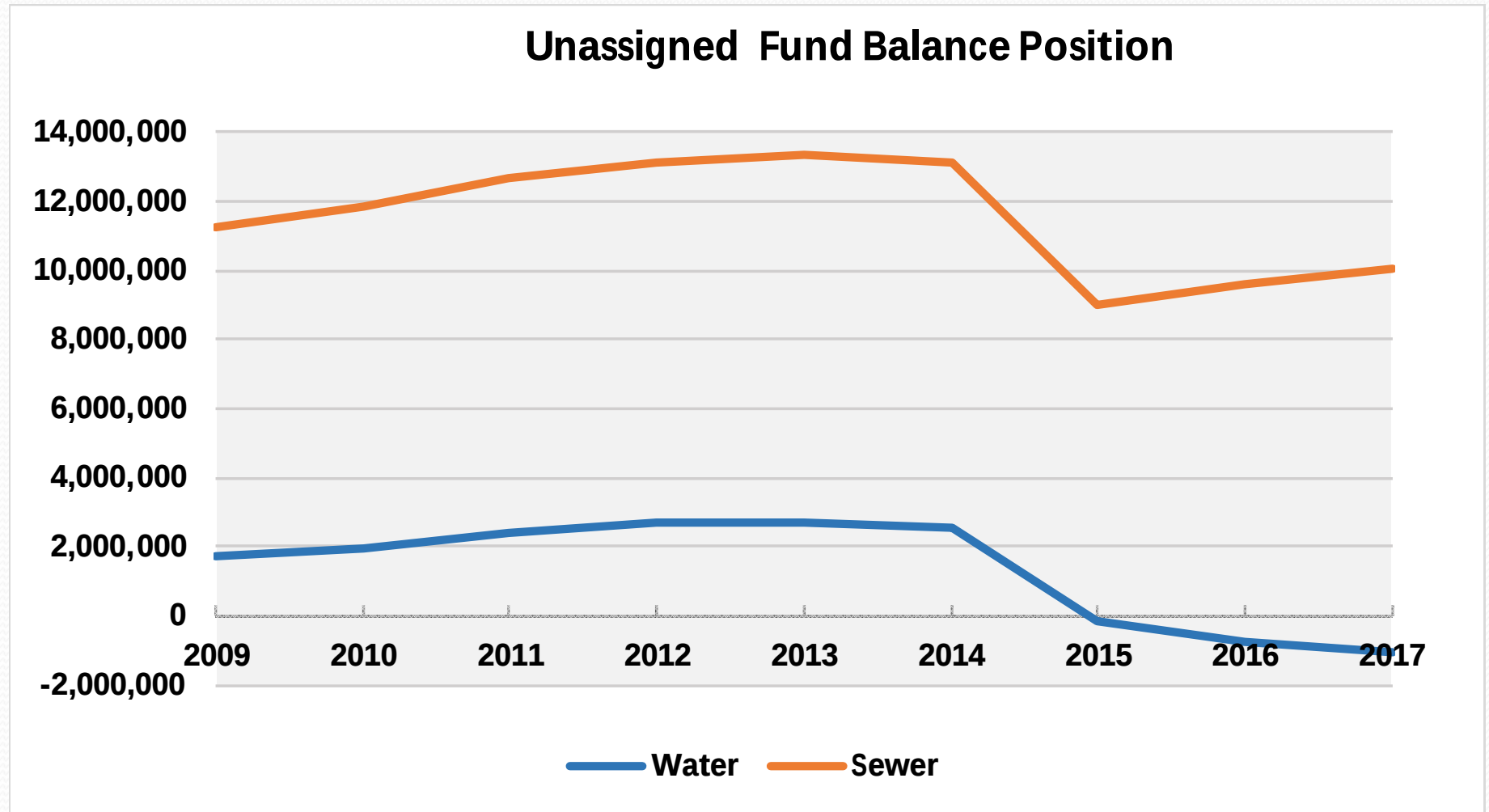
Sewer Sales	2013	2014	2015	2016	2017	5 Year Ave
Total WTR	56,242,334	55,030,122	54,001,306	56,495,030	54,355,827	55,224,924
Less: DEDUCT	298,000	130,000	137,000	167,000	139,000	174,200
Less: LAWNWTR	2,687,491	1,788,262	1,834,900	3,283,349	2,163,615	2,351,523
Total Sewer	53,256,843	53,111,860	52,029,406	53,044,681	52,053,212	52,699,200
% Change	-	-0.272%	-2.038%	1.951%	-1.869%	-0.6%



Net Operating Income (Loss) Trend



Unassigned Fund Balance Trend



Out of Compliance with Standards

Michigan Department of Treasury

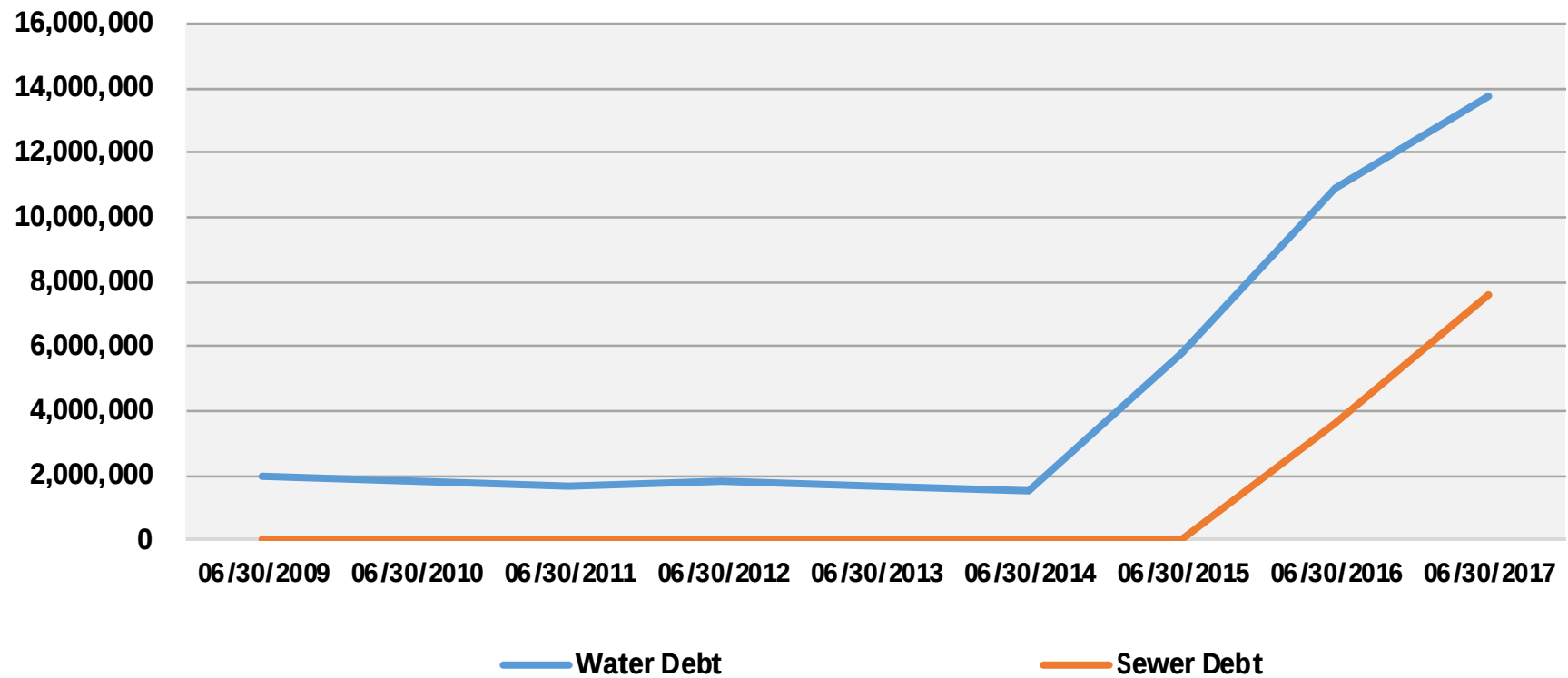
- **\$1 Million Deficit in Water Fund**

Michigan Department of Environmental Quality

- **No Capital Improvement Financing Plan**

Debt Service

Debt Service



Rate Setting Discussion

The goal in setting Water and Sewer Rates is to Breakeven where rates are set at a level to cover the costs associated with the system i.e. to Breakeven

Water and Sewer Rates have three items that influence the rate:

- Estimate of the Volume of Water or Sewer to be sold;
- Generate enough revenue to cover all operating costs; and
- Generate enough revenue to cover the debt service schedule and or to do capital improvements

Different Cost Recovery Methods

- Factor Based Cost Recovery (Capacity), which is based on meter size factoring;
- Usage Based (Commodity) Cost Recovery; and
- Customer Based Cost Recovery for Debt Service and other related Fixed Costs

Equivalent Residential Unit (ERU) Factoring

“Equivalent residential unit” or “ERU”

A factoring method, established by the American Water Works Association (AWWA) which estimates the capacity of each different size meter and their related water or sewage usage to that required or generated by the normal single-family residential user.

Equivalent Residential Unit (ERU)

Meter Size	AWWA (capacity)	Factor based on 5/8
5/8 inch	20	1.00
3/4 inch	30	1.50
1 inch	50	2.50
1-1/2 inch	100	5.00
2 inch	160	8.00
3 inch	300	15.00
4 inch	500	25.00
6 inch	1,000	50.00
8 inch	1,600	80.00
10 inch	2,300	115.00
12 inch	4,300	215.00
14 inch	6,400	320.00
16 inch	9,160	458.00

Active Meter Count

Summary by Meter Size							
Meter Size	Count	Inventory	Retired	Total Active	Irrigation	Water	%
	60		49	11			
	0						
0.625	4566	3	19	4544	362	4182	67%
0.075	1410	2	3	1405		1405	22.5%
1	402			402		402	6.4%
1.5	103			103		103	1.6%
2	126			126		126	2.0%
3	14			14		14	0.22%
4	7			7		7	0.11%
6	3			3		3	0.05%
8	2			2		2	0.03%
10"	1			1		1	0.02%
2 COMPOUND HIGH	1						
2 COMPOUND LOW	1						
	6696	5	71	6607		6245	

Equivalent Residential Unit (ERU)

ERUs by Meter Size			
Meter Size	Active Meters	AWWA ERU	ERUs
0.625	4,544	1.00	4,544
0.075	1,405	1.50	2,108
1	402	2.50	1,005
1.5	103	5.00	515
2	126	8.00	1,008
3	14	15.00	210
4	7	25.00	175
6	3	50.00	150
8	2	80.00	160
10"	1	115.00	115
2 COMPOUND HIGH			
2 COMPOUND LOW			
Total	6,245		9,990

City's Current Cost Recovery Methods

The City is currently using a combination of all three cost recovery methods:

- Commodity (Usage) Pricing for both Water and Sewer;
- Factor Based Capacity Charge on Water; and
- Customer Based Capacity Charge on Sewer.

City's Current Cost Structure

Water

Water	2018-19 Adopted Budget	%
Water - Purchase # of Units	53,812,269	
Capacity (Ready to Serve or RTS)		
RTS Fee Genesse County	384,000	4.9%
Subtotal Genesse County	\$ 384,000	4.9%
City System operating costs	2,518,445	31.9%
Debt Service	1,228,535	15.6%
Deprecation	660,000	8.4%
Total RTS or Capacity Charge	\$ 4,790,980	60.8%
Number of ERU Meters	9,990	
Annual Fixed Cost per ERU	\$ 479.60	
Quarterly Fixed Cost per ERU	\$ 119.90	
Commodity		
per unit rate Genesse County	0.0575	
Cost based on Usage	3,094,205	39.2%
Total Commodity Charge	3,094,205	39.2%
Total Costs (plus debt service)	\$ 7,885,185	100.0%

Water Debt Service

Debt Service - Water	2019	2020	2021	2022	2023
2011 Water (Fenton Rd)	30,750	30,188	29,625	29,063	31,000
2011 Water	174,500	166,485			
2014 DWRF #1	383,813	382,375	380,813	379,125	382,250
2015 DWRF #2	254,688	255,500	251,250	251,938	252,500
2016 DWRF #3	162,143	165,080	162,955	166,205	163,518
2016 DWRF #4	123,367	126,429	124,429	127,367	125,242
2018 DWRF 5	99,275	103,150	101,913	100,675	99,438
Total	1,228,535	1,229,208	1,050,985	1,054,373	1,053,947
Estimated Water Sales (Units)	53,812,269	53,812,269	53,812,269	53,812,269	53,812,269
Per unit of water sold	0.02283	0.02284	0.01953	0.01959	0.01959
Water ERU's	9,990	9,990	9,990	9,990	9,990
Annual Charge Per ERU	\$ 122.98	\$ 123.05	\$ 105.21	\$ 105.55	\$ 105.51

Sewer

Sewer	2018-19 Adopted Budget	%
Sewer - Purchase # of Units	51,532,680	
Capacity (Fixed Costs or Ready to Serve or RTS)		
Flat Fee Genesse County	1,891,222	28.1%
RTS Fee Genesse County	623,474	9.3%
Subtotal Genesse County	\$ 2,514,697	37.4%
System operating costs	2,125,708	31.6%
Debt Service	479,696	7.1%
Deprecation	667,500	9.9%
Total Capacity (Fixed Costs or RTS)	\$ 5,787,601	86.1%
Current Number of Active Meters	6,607	
Annual Fixed Cost per meter	\$ 875.98	
Quarterly Fixed Cost per Meter	\$ 219.00	
Commodity		
per unit rate Genesse County	0.0182	
Cost based on Usage	937,895	13.9%
Total Commodity Charge	\$ 937,895	13.9%
Total Costs (including debt service)	\$ 6,725,496	100.0%

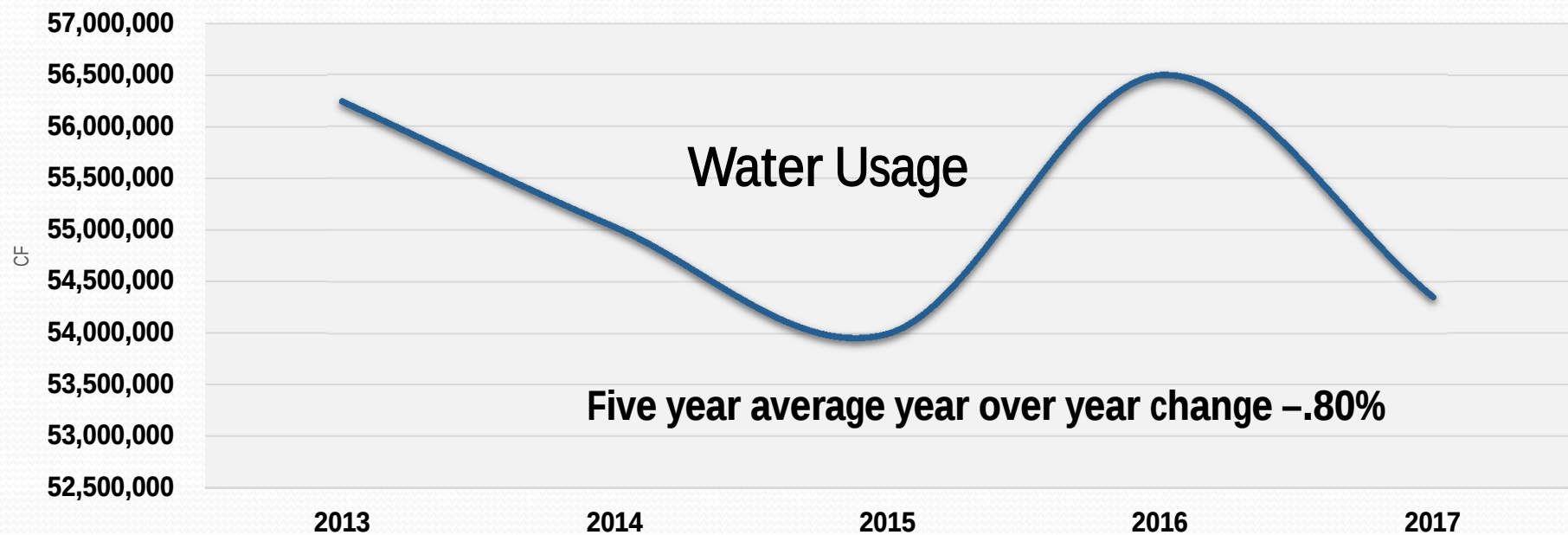
Sewer Debt Service

Sewer Debt	2019	2020	2021	2022	2023
2015 SRF	479,696	481,946	479,008	480,883	477,571
Total	479,696	481,946	479,008	480,883	477,571
Estimated Sewer Sales (Units)	51,532,680	51,532,680	51,532,680	51,532,680	51,532,680
Per unit of sewer sold	0.00931	0.00935	0.00930	0.00933	0.00927
ERU's	9,990	9,990	9,990	9,990	9,990
Annual Charge Per ERU	\$ 48.02	\$ 48.25	\$ 47.95	\$ 48.14	\$ 47.81

Unit Based Cost Recovery Method

Water Unit Sales

Item # 1	Actual	Actual	Actual	Actual	Actual	Five Year Ave
	2013	2014	2015	2016	2017	
Water Sold (Units)	56,242,334	55,030,122	54,001,306	56,495,030	54,355,827	55,224,924
% Change in Water Sold		-2.2%	-1.9%	4.6%	-3.8%	-0.8%



Water Operating Cost

Water - Operating Costs	2018-19 Adopted Budget
Water Sold (Units)	53,812,269 *
Water Purchase	3,738,000
Cost per Units Sold	\$ 0.06946
Other Operating Costs	2,258,650
Deprecation	660,000
Cost per Units Sold	\$ 0.05424
Total Cost	6,656,650
Total Cost per Units Sold	\$ 0.1237013

* Estimated based on average year over year change or 1% less than the year before

Water Debt Service

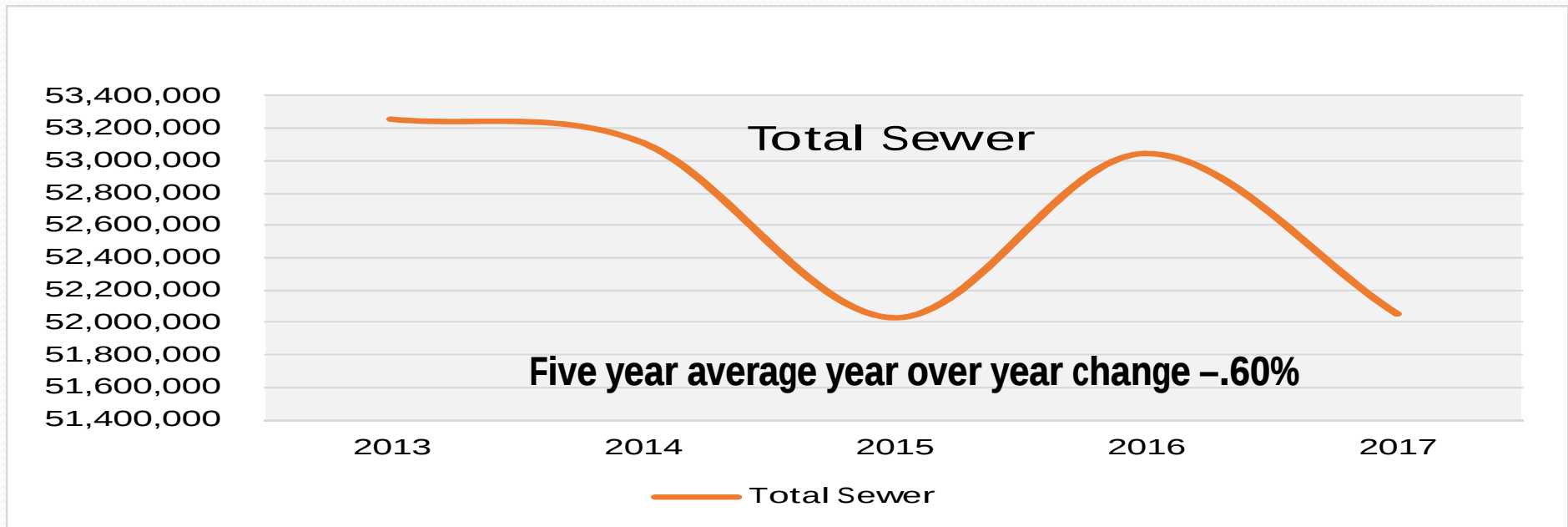
Water Debt	2019	2020	2021	2022	2023
2011 Wter (Fenton Rd)	30,750	30,188	29,625	29,063	31,000
2011 Water	174,500	166,485			
2014 DWRF #1	383,813	382,375	380,813	379,125	382,250
2015 DWRF #2	254,688	255,500	251,250	251,938	252,500
2016 DWRF #3	162,143	165,080	162,955	166,205	163,518
2016 DWRF #4	123,367	126,429	124,429	127,367	125,242
2018 DWRF 5	99,275	103,150	101,913	100,675	99,438
Total	1,228,535	1,229,208	1,050,985	1,054,373	1,053,947
Estimated Water Sales (Units)	53,812,269	53,812,269	53,812,269	53,812,269	53,812,269
Per unit of water sold	0.02283	0.02284	0.01953	0.01959	0.01959

Water Total Rate

Water Rate Based on Usage on a per Unit Basis	2018-19 Adopted Budget
Operating Cost per unit	0.1237
Debt Service per Unit	0.0228
Total per units sold	0.1465

Sewer Unit Sales

Item # 1	2013	2014	2015	2016	2017	5 Year Ave
Total WTR	56,242,334	55,030,122	54,001,306	56,495,030	54,355,827	55,224,924
Less: DEDUCT	298,000	130,000	137,000	167,000	139,000	174,200
Less: LAWNWTR	2,687,491	1,788,262	1,834,900	3,283,349	2,163,615	2,351,523
Total Sewer	53,256,843	53,111,860	52,029,406	53,044,681	52,053,212	52,699,200
% Change	-	-0.272%	-2.038%	1.951%	-1.869%	-0.6%



Sewer Operating Cost

Unit Based Cost Recovery	2018-19 Adopted Budget
Sewer Sold (Units)	51,532,680 *
Sewer Treatment Purchase	3,500,000
Cost per Units Sold	0.0679
Other Operating Costs	2,078,300
Deprecation	667,500
Total City Cost	2,745,800
Cost per Units Sold	0.0533
Total Cost	\$ 6,245,800
Cost per Units Sold	\$ 0.1212

* Estimated based on average year over year change or 1% less than the year before

Sewer Debt Service

Sewer Debt Service	2019	2020	2021	2022	2023
2015 SRF	479,696	481,946	479,008	480,883	477,571
Total	479,696	481,946	479,008	480,883	477,571
Estimated Sewer Sales (Units)	51,532,680	51,532,680	51,532,680	51,532,680	51,532,680
Per unit of sewer sold	0.00931	0.00935	0.00930	0.00933	0.00927

Sewer Total Rate

Sewer Rate Based on Usage on a per Unit Basis	2018-19 Adopted Budget
Operating Cost per unit	0.1212
Debt Service per Unit	0.0093
Total per unit sold	0.1305

Comparison of Current Rates vs. Unit Cost Recovery Rate

Current Rates – Sample Bill

Current Water Rate based on 5/8" meter		Quarterly Charge
Units Used	1,100	
Capacity Charge	63.0600	63.06
Commodity Charge per unit	0.0667	73.37
Total per units sold		136.43

Current Sewer Rate based on 5/8" meter		Quarterly Charge
Units Used	1,100	
Capacity Charge	50.61	50.61
Commodity Charge per unit	0.0182	20.02
Total per units sold		70.63

Cost Recovery Rates Based on Unit Pricing

Water Rate Based on Usage on a per Unit Basis	2018-19 Adopted Budget	Current Quarterly Charge
Operating Cost per unit	0.1237	
Debt Service per Unit	0.0228	
Total per units sold	0.1465	
Est Ave Resid Units Used	1100	
Total Water	161.18	136.43
Sewer Rate Based on Usage on a per Unit Basis	2018-19 Mayor Recommended Budget	Current Quarterly Charge
Operating Cost per unit	0.1191	
Debt Service per Unit	0.0093	
Total per unit sold	0.1284	
Est Ave Resid Units Used	1100	
Total Sewer	141.29	70.63

Estimating the Average Residential User

Estimated Average Annual Residential User

Average Residential Customer					
	Total 2017 Water Sold	% of total Meters that are 5/8"	Usage related to Residential Users	Number of 5/8" Meters	Estimated Average Annual Residential User Volume
	54,355,827	67%	36,399,691	4,182	8,704

Current Annual Cost for Est. Ave. Residential User Using Current Rates

Current Water Rate based on 5/8" meter		Annual Charge
Est Ave Residential	8,704	
Capacity	63.0600	252.24
Commodity Charge per unit	0.0667	580.55
Total per units sold		832.79

Current Sewer Rate based on 5/8" meter		Annual Charge
Est Ave Residential	8,704	
Capacity	50.6100	202.44
Commodity Charge per unit	0.0182	158.41
Total per units sold		360.85

Cost Recovery Rates Based on Unit Pricing

Water Rate Based on Usage on a per Unit Basis	2018-19 Adopted Budget
Operating Cost per unit	0.1237
Debt Service per Unit	0.0228
Total per units sold	0.1465
Est Ave Resid Units Used	8704
Total Water	1,275.39
Sewer Rate Based on Usage on a per Unit Basis	2018-19 Adopted Budget
Operating Cost per unit	0.1212
Debt Service per Unit	0.0093
Total per unit sold	0.1305
Est Ave Resid Units Used	8704
Total Sewer	1,135.94

Comparison of Current Rate vs. Needed Cost Recovery Rate

Current Water Rate based on 5/8" meter		Annual Charge
Ave Residential usage	8,704	
Total Current Set Rates		832.79
Total Breakeven Rate		1,275.39
Difference		(442.60)

Current Sewer Rate based on 5/8" meter		Annual Charge
Ave Residential Usage	8,704	
Total Current Set Rates		360.85
Total Breakeven Rate		1,135.94
Difference		(775.09)

Recommended Rate Structure

- Use the same cost recovery/breakeven billing structure for both Water and Sewer;
- Base Capacity cost recovery on the AWWA ERU table;
- Use a Capacity Charge to recover fixed costs (ready to serve) for both Water and Sewer;
- Use a Debt Service Charge to recover costs related to the debt service schedule for both Water and Sewer; and
- Use a Commodity Charge to recover costs related to usage.

Water – Capacity Charge Based on ERUs

Capacity based on ERUs by Meter			Quarterly ERU Rate	Current Factored Quarterly Rate	Needed Quarterly Rate Adjustment
Meter Size	Active Meters	AWWA ERU			
0.625	4,544	1.00	122.61	63.06	59.55
0.075	1,405	1.50	183.91	0.00	183.91
1	402	2.50	306.52	98.85	207.67
1.5	103	5.00	613.04	190.86	422.18
2	126	8.00	980.87	354.45	626.42
3	14	15.00	1,839.12	778.74	1,060.38
4	7	25.00	3,065.21	1,392.18	1,673.03
6	3	50.00	6,130.41	3,079.14	3,051.27
8	2	80.00	9,808.66	5,123.94	4,684.72
10"	1	115.00	14,099.95	11,002.74	3,097.21
2 COMPOUND HIGH	-				
2 COMPOUND LOW	-				
Total	6,607				

Water Capacity Revenue Based on ERUs

RTS based on ERUs by Meter Size				Quarterly Adjusted Rate - ERU Based	Quarterly Revenue	Annual Revenue
Meter Size	Active Meters	AWWA ERU	ERUs			
0.625	4,544	1.00	4,544	122.61	557,131.78	2,228,527
0.075	1,405	1.50	2,108	183.91	258,396.84	1,033,587
1	402	2.50	1,005	306.52	123,221.27	492,885
1.5	103	5.00	515	613.04	63,143.24	252,573
2	126	8.00	1,008	980.87	123,589.09	494,356
3	14	15.00	210	1,839.12	25,747.73	102,991
4	7	25.00	175	3,065.21	21,456.44	85,826
6	3	50.00	150	6,130.41	18,391.23	73,565
8	2	80.00	160	9,808.66	19,617.32	78,469
10"	1	115.00	115	14,099.95	14,099.95	56,400
2 COMPOUND HIGH	-					
2 COMPOUND LOW	-					
Total	6,607		9,990		1,224,795	4,899,180

Commodity Rate to remain the same as billed or .0575 per unit

Sewer – Capacity Charge Based on Meters

Number of Active Meters				
Meter Size	Active Meters	Quarterly Rate Needed	Quarterly Revenue	Annual Revenue
0.625	4,544	214.97	976,836	3,907,346
0.075	1,405	214.97	302,037	1,208,147
1	402	214.97	86,419	345,676
1.5	103	214.97	22,142	88,569
2	126	214.97	27,087	108,346
3	14	214.97	3,010	12,038
4	7	214.97	1,505	6,019
6	3	214.97	645	2,580
8	2	214.97	430	1,720
10"	1	214.97	215	860
			-	-
			-	-
Total	6,607		1,420,325	5,681,301

Sewer Capacity Revenue Based on ERUs

RTS based on ERUs by Meter Size

Meter Size	Active Meters	AWWA ERU	ERUs	Quarterly ERU Based Rate	Quarterly Revenue	Annual Revenue
0.625	4,544	1.0	4,544	142.18	646,074	2,584,297
0.075	1,405	1.5	2,108	213.27	299,648	1,198,593
1	402	2.5	1,005	355.45	142,893	571,571
1.5	103	5.0	515	710.91	73,224	292,895
2	126	8.0	1,008	1,137.45	143,319	573,277
3	14	15.0	210	2,132.73	29,858	119,433
4	7	25.0	175	3,554.55	24,882	99,527
6	3	50.0	150	7,109.09	21,327	85,309
8	2	80.0	160	11,374.55	22,749	90,996
10"	1	115.0	115	16,350.91	16,351	65,404
Total	6,245		9,990		1,420,325	5,681,301

Recommended Billing Solution

1. Separate Capacity, Debt Service and Commodity on the bill
2. Include depreciation in setting rates and place annual depreciation expense in Water/Sewer Capital Fund (to fund future CIP projects thus eliminating the need to always issue debt)
3. Set aside **Net** Tap Fee Revenue for Capital Improvements

Sample Bill with – Capacity, Debt Service and Commodity Rates Separated on Bill

Capacity Charge, Debt Service and Commodity Charge Rates

Water	2018-19 Adopted Budget
Estimated # of Units Sold	53,812,269
ERU's	9,990
Ready to Serve (RTS) Fee	
RTS Genesse County	384,000
System operating costs	2,518,445
Deprecation	660,000
Total Ready to Serve Fee	\$ 3,562,445
Annual Per ERU	356.62
Quarterly Per ERU	89.15
Debt Service	
Debt Service	\$ 1,228,535
Annual Per ERU	122.98
Quarterly Per ERU	30.75
Commodity Charge	
per unit rate Genesse County	0.0575
Cost based on Usage	3,094,205
Total Commodity Charge	\$ 3,094,205
Total Costs (with debt service)	\$ 7,885,185

Capacity Charge, Debt Service and Commodity Charge Rates

Sewer	2018-19 Adopted Budget
Estimated # of Units Sold	51,532,680
ERU's	9,990
Ready to Serve (RTS) Fee	
RTS Genesee County	\$ 2,514,697
System operating costs	2,125,708
Deprecation	667,500
Total Ready to Serve Fee	\$ 5,307,905
Annual Per ERU	531.35
Quarterly per ERU	132.84
Debt Service	
Debt Service	479,696
Annual Per ERU	48.02
Quarterly ERU	12.01
Commodity Charge	
per unit rate Genesee County	0.0182
Cost based on Usage	937,894.77
Total Commodity Charge	937,894.77
Total Costs (with debt service)	\$ 6,725,496

Recommended Bill Structure for an Estimated Average Residential Customer

Water Bill based on 5/8" meter		Annual Charge
Est Ave Residential User Volume	8,704	
Capacity	89.15	356.62
Debt Service	30.75	122.98
Commodity Charge per unit	0.0575	500.47
Total Annual Charge		980.08

Sewer Bill based on 5/8" meter		Annual Charge
Est Ave Residential User Volume	8,704	
Capacity	132.84	531.35
Debt Service	12.01	48.02
Commodity Charge per unit	0.0182	158.41
Total Annual Charge		737.78

Recommended Bill Structure for a **Sewer Only** Customer Based on Estimated Average Residential Customer

Sewer Only Bill based on Ave Residential Customer		Annual Charge
Est Ave Residential User Volume	N/A	
Capacity	132.84	531.35
Debt Service	12.01	48.02
Total Annual Charge		579.37
Total Quarterly Flat Rate Charge		144.84

Conclusion/Recommendations

- Review and adjust rates each year to ensure that expenses of the system are covered by the revenues generated from rates. It also keeps increases to manageable levels.
- Incorporate Debt Service costs into the rates being set to provide the cash flow necessary to retire debt principal
- Incorporate Depreciation Expense in setting rates and set that amount aside, each year, in a Water and Sewer Capital Account to help fund future Water and Sewer CIP projects (less need for debt to finance projects).
- Set aside **Net** Tap Fee Revenue for Capital Improvements.
- Review Utility Ordinance so that management has the flexibility to do what it needs to do each year.

Questions?