



**City of Grand Rapids, Michigan**

# **Water/Sewer Rate Study**

**2018**

**Final**

# MEMORANDUM

CITY OF GRAND RAPIDS

**DATE:** January 1, 2019

**TO:** Mark Washington, City Manager  
Members of the Utility Advisory Board

**FROM:** Molly J. Eastman  
Fiscal Service Manager

**SUBJECT: 2018 WATER/SEWER RATE STUDY – FINAL REPORT**

The final study, setting water and sewer rates effective January 1, 2019, for Grand Rapids and the retail and wholesale partner communities it serves, is submitted herein for reference and/or retention. A table of contents immediately precedes the report's three sections and lists the respective tasks performed in reviewing the operating and financial performance of the Water Supply System and Sewage Disposal System. The annual study consists of a comprehensive review of the operating and capital costs by community, in conjunction with customer base variation and usage, and calculates recommended commodity and service rates based upon adherence to: (a) the uniform rate-setting methodology established in 1976-77 for customer communities not party to the uniform water and sewer service agreements; and (b) rate methodology changes contractually agreed in the uniform water and sewer service agreements for Utility Advisory Board (UAB) member customer communities. The methodology yields consistent performance in providing for the long-term needs of the water and sewage systems and assuring adequate debt service coverage pursuant to the systems' master bond ordinance covenants.

The City's 2018 review marked the 42<sup>nd</sup> annual water/sewer rate study report and resulted in utility rate increases as follows:

1. Water Supply System revenue requirements increased \$1,156,591, or 2.71% more than revenue generated by existing rates and charges.
2. Sewage Disposal System revenue requirements increased \$1,734,422, or 3.28% more than revenue generated by existing rates and charges.

The final rate study continues to provide funding from the penalty fees to support both of the City's circuit breaker programs. A contribution of \$220,923 will support the Individual Circuit Breaker program aimed to help eligible retail customers pay their water/sewer bills. Sufficient funding was also available to apply the City and Customer Community Circuit Breaker relief to the water and sewer utility rates in the City of Grand Rapids, City of Walker, City of

Kentwood, Wright Township, Cascade Township and Grand Rapids Township to limit each retail service area's revenue requirement change to a level in line with the overall systems' average change.

Five schedules supplement and immediately follow this memo. The first schedule summarizes the revenue requirement changes by customer community. The second and third schedules show water and sewer rate adjustment impacts to typical domestic and commercial customers with the system average quarterly consumption in each retail community. They also include a comparison of the approximate monthly charge for Wright Township's residential equivalent unit (REU) rate structure. The final two schedules show comparative water and sewer monthly service and commodity rate adjustments for the City's retail and wholesale customer communities.

Announcement of the proposed 2019 water and sewer rates to the UAB partners and other customer communities was made November 13, 2018. All partner communities participated in a thirty (30) day comment period following notification of the rates as provided in the water/sewer service agreements.

Pursuant to Section 2.33 and 2.94 of the City Code, on November 13, 2018, the preliminary rate study with explanatory materials were filed with the City Clerk, made available online at [www.grcity.us/watersewerratestudy](http://www.grcity.us/watersewerratestudy), and notice of availability of such information was published in the newspaper at least twenty (20) days prior to adoption of the resolution to provide for opportunities for public comment. The City Commission approved the final water and sewer rates by resolution on December 18, 2018.

Attachments as named

MJE: mje

**CITY OF GRAND RAPIDS, MICHIGAN  
2018 FINAL WATER/SEWER RATE STUDY  
SUMMARY OF REVENUE REQUIREMENT CHANGES  
FOR RATES EFFECTIVE JANUARY 1, 2019**

	<u>WATER (1)</u>		<u>SEWER (1)</u>	
	<u>AMOUNT</u>	<u>PERCENT</u>	<u>AMOUNT</u>	<u>PERCENT</u>
GRAND RAPIDS	\$ 548,029	2.17%	\$ 1,324,832	3.66%
WALKER	117,489	3.63%	68,451	1.48%
KENTWOOD	152,075	3.63%	148,459	3.59%
CASCADE TWP	130,176	3.63%	58,007	2.40%
GRAND RAPIDS TWP	81,885	3.63%	89,109	3.66%
TALLMADGE TWP	3,276	1.61%	(2,484)	-0.56%
WRIGHT TWP	N/A	N/A	9,970	3.66%
EAST GRAND RAPIDS	52,155	6.73%	2,915	0.39%
ADA TWP	38,784	3.07%	22,532	1.79%
OTTAWA COUNTY	37,691	1.72%	NA	NA
GAINES TWP	N/A	N/A	14,911	7.70%
CALEDONIA TWP	N/A	N/A	(2,280)	-1.57%
<b>SYSTEM</b>	<b>\$ 1,156,591</b>	<b>2.71%</b>	<b>\$ 1,734,422</b>	<b>3.28%</b>

(1) Change in revenue requirements based on revenues currently generated from rates, customer base and volumes reported in the preliminary rate study (Includes consideration for relief from CCCCB).

**DISCLOSE RELIEF PROVIDED BY CITY & CUSTOMER COMMUNITY CIRCUIT BREAKER (CCCB)**

	<u>WATER</u>		<u>SEWER</u>	
	<u>AMOUNT</u>	<u>PERCENT</u>	<u>AMOUNT</u>	<u>PERCENT</u>
SYSTEM REVENUE REQUIREMENT	\$ 43,868,464	2.71%	\$ 54,611,300	3.28%
ADD: CCCCB RELIEF	394,237	0.92%	307,829	0.58%
LESS: CAPITAL INVESTMENT REIMBURSEMENT			(107,854)	-0.21%
<b>SYSTEM CHANGE- WITHOUT RELIEF</b>	<b>\$ 44,262,701</b>	<b>3.63%</b>	<b>\$ 54,811,275</b>	<b>3.66%</b>

**CITY OF GRAND RAPIDS, MICHIGAN  
 2018 FINAL WATER/SEWER RATE STUDY  
 IMPACT OF RATE ADJUSTMENTS ON DOMESTIC USERS  
 BY CUSTOMER COMMUNITY \*  
 FOR RATES EFFECTIVE JANUARY 1, 2019**

	<u>APPROXIMATE QUARTERLY BILL</u>		<u>CHANGE</u>	
	<u>2018</u>	<u>2019</u>	<u>DOLLARS</u>	<u>PERCENT</u>
<b>GRAND RAPIDS</b>				
WATER	\$ 84.48	\$ 86.28	\$ 1.80	2.13%
SEWER	114.69	119.04	4.35	3.79%
	<u>\$ 199.17</u>	<u>\$ 205.32</u>	<u>\$ 6.15</u>	3.09%
BASE RATIO	1.00	1.00		
<b>WALKER</b>				
WATER	\$ 82.47	\$ 85.32	\$ 2.85	3.46%
SEWER	131.80	133.55	1.75	1.33%
	<u>\$ 214.27</u>	<u>\$ 218.87</u>	<u>\$ 4.60</u>	2.15%
RATIO TO GR	1.08	1.07		
<b>KENTWOOD</b>				
WATER	\$ 84.72	\$ 87.48	\$ 2.76	3.26%
SEWER	71.03	73.22	2.19	3.08%
	<u>\$ 155.75</u>	<u>\$ 160.70</u>	<u>\$ 4.95</u>	3.18%
RATIO TO GR	0.78	0.78		
<b>CASCADE TWP</b>				
WATER	\$ 129.81	\$ 134.46	\$ 4.65	3.58%
SEWER	144.71	147.89	3.18	2.20%
	<u>\$ 274.52</u>	<u>\$ 282.35</u>	<u>\$ 7.83</u>	2.85%
RATIO TO GR	1.38	1.38		
<b>GRAND RAPIDS TWP</b>				
WATER	\$ 98.01	\$ 101.40	\$ 3.39	3.46%
SEWER	124.94	129.28	4.34	3.47%
	<u>\$ 222.95</u>	<u>\$ 230.68</u>	<u>\$ 7.73</u>	3.47%
RATIO TO GR	1.12	1.12		
<b>TALLMADGE TWP</b>				
WATER	\$ 108.48	\$ 110.61	\$ 2.13	1.96%
SEWER	283.89	282.06	(1.83)	-0.64%
	<u>\$ 392.37</u>	<u>\$ 392.67</u>	<u>\$ 0.30</u>	0.08%
RATIO TO GR	1.97	1.91		

\* THE COMPARISONS ABOVE ARE BASED ON SYSTEM AVERAGE DOMESTIC CUSTOMER  
 QUARTERLY CONSUMPTION OF: WATER- 27.00 UNITS OR 20,196 GALLONS  
 SEWER - 19.00 UNITS OR 14,212 GALLONS  
 NO. OF MONTHS: 3

**REU (RESIDENTIAL EQUIVALENT UNIT) CUSTOMER COMMUNITY- APPROXIMATE QUARTERLY BILL**

<b>WRIGHT TWP-</b>				
SEWER (No. of REU 1.00)	<u>\$ 161.19</u>	<u>\$ 167.10</u>	<u>\$ 5.91</u>	3.67%

**CITY OF GRAND RAPIDS, MICHIGAN  
2018 FINAL WATER/SEWER RATE STUDY  
IMPACT OF RATE ADJUSTMENTS ON COMMERCIAL USERS  
BY CUSTOMER COMMUNITY  
FOR RATES EFFECTIVE JANUARY 1, 2019**

	<u>APPROXIMATE QUARTERLY BILL</u>		<u>CHANGE</u>	
	<u>2018</u>	<u>2019</u>	<u>DOLLARS</u>	<u>PERCENT</u>
<b>GRAND RAPIDS</b>				
WATER	\$ 495.18	\$ 495.21	\$ 0.03	0.01%
SEWER	786.57	800.10	13.53	1.72%
	<u>\$ 1,281.75</u>	<u>\$ 1,295.31</u>	<u>\$ 13.56</u>	1.06%
BASE RATIO	1.00	1.00		
<b>WALKER</b>				
WATER	\$ 427.89	\$ 443.94	\$ 16.05	3.75%
SEWER	673.62	684.33	10.71	1.59%
	<u>\$ 1,101.51</u>	<u>\$ 1,128.27</u>	<u>\$ 26.76</u>	2.43%
RATIO TO GR	0.86	0.87		
<b>KENTWOOD</b>				
WATER	\$ 410.64	\$ 426.54	\$ 15.90	3.87%
SEWER	572.76	593.19	20.43	3.57%
	<u>\$ 983.40</u>	<u>\$ 1,019.73</u>	<u>\$ 36.33</u>	3.69%
RATIO TO GR	0.77	0.79		
<b>CASCADE TWP</b>				
WATER	\$ 634.17	\$ 656.97	\$ 22.80	3.60%
SEWER	714.48	731.31	16.83	2.36%
	<u>\$ 1,348.65</u>	<u>\$ 1,388.28</u>	<u>\$ 39.63</u>	2.94%
RATIO TO GR	1.05	1.07		
<b>GRAND RAPIDS TWP</b>				
WATER	\$ 492.69	\$ 511.47	\$ 18.78	3.81%
SEWER	625.59	648.06	22.47	3.59%
	<u>\$ 1,118.28</u>	<u>\$ 1,159.53</u>	<u>\$ 41.25</u>	3.69%
RATIO TO GR	0.87	0.90		
<b>TALLMADGE TWP</b>				
WATER	\$ 773.25	\$ 786.27	\$ 13.02	1.68%
SEWER	2,275.62	2,262.03	(13.59)	-0.60%
	<u>\$ 3,048.87</u>	<u>\$ 3,048.30</u>	<u>\$ (0.57)</u>	-0.02%
RATIO TO GR	2.38	2.35		

\* THE COMPARISONS ABOVE ARE BASED ON SYSTEM AVERAGE COMMERCIAL CUSTOMER  
QUARTERLY CONSUMPTION OF : WATER- 225.00 UNITS OR 168,300 GALLONS  
SEWER - 213.00 UNITS OR 159,324 GALLONS  
NO. OF MONTHS: 3

**REU (RESIDENTIAL EQUIVALENT UNIT) CUSTOMER COMMUNITY- APPROXIMATE QUARTERLY BILL**

<b>WRIGHT TWP</b>				
SEWER (No. of REU 1.00)	<u>\$ 161.19</u>	<u>\$ 167.10</u>	<u>\$ 5.91</u>	3.67%

**CITY OF GRAND RAPIDS, MICHIGAN  
2018 FINAL WATER/SEWER RATE STUDY  
WATER & SEWER RATES FOR GRAND RAPIDS & RETAIL CUSTOMER COMMUNITIES  
EFFECTIVE JANUARY 1, 2019**

**WATER RATES**

	<u>METER CODE</u>	<u>GRAND RAPIDS</u>	<u>WALKER</u>	<u>KENTWOOD</u>	<u>CASCADE</u>	<u>GR. RAPIDS TOWNSHIP</u>	<u>TALLMADGE TOWNSHIP</u>	<u>WRIGHT TOWNSHIP</u>
COMMODITY CHARGE (HCF)		\$ 1.98	\$ 1.70	\$ 1.58	\$ 2.41	\$ 1.92	\$ 3.38	NA
<b>MONTHLY SERVICE CHARGE BY METER SIZE</b>								
3/4" & Less	A	\$ 10.94	\$ 13.14	\$ 14.94	\$ 23.13	\$ 16.52	\$ 6.45	NA
1"	B	\$ 16.57	\$ 20.48	\$ 23.68	\$ 38.24	\$ 26.49	\$ 8.59	NA
1-1/4"	C	\$ 23.81	\$ 29.92	\$ 34.92	\$ 57.67	\$ 39.31	\$ 11.34	NA
1-1/2"	D	\$ 32.66	\$ 41.46	\$ 48.66	\$ 81.42	\$ 54.98	\$ 14.70	NA
2"	E	\$ 55.18	\$ 70.83	\$ 83.63	\$ 141.87	\$ 94.86	\$ 23.26	NA
3"	F	\$ 119.54	\$ 154.74	\$ 183.54	\$ 314.58	\$ 208.82	\$ 47.70	NA
4"	G	\$ 209.64	\$ 272.22	\$ 323.42	\$ 556.37	\$ 368.36	\$ 81.92	NA
6" & Over	H	\$ 467.06	\$ 607.86	\$ 723.06	\$ 1,247.22	\$ 824.18	\$ 179.70	NA

**SEWER RATES**

	<u>METER CODE</u>	<u>GRAND RAPIDS</u>	<u>WALKER</u>	<u>KENTWOOD</u>	<u>CASCADE</u>	<u>GR. RAPIDS TOWNSHIP</u>	<u>TALLMADGE TOWNSHIP</u>	<u>WRIGHT TOWNSHIP</u>
COMMODITY CHARGE (HCF)		\$ 3.33	\$ 2.54	\$ 2.63	\$ 2.66	\$ 2.38	\$ 9.87	NA
REU Charge (Monthly) *		NA	NA	NA	NA	NA	NA	\$ 55.70
<b>MONTHLY SERVICE CHARGE BY METER SIZE</b>								
3/4" & Less	A	\$ 18.59	\$ 28.43	\$ 7.75	\$ 32.45	\$ 28.02	\$ 31.51	NA
1"	B	\$ 30.27	\$ 47.77	\$ 11.00	\$ 54.91	\$ 47.04	\$ 53.24	NA
1-1/4"	C	\$ 45.29	\$ 72.63	\$ 15.18	\$ 83.79	\$ 71.49	\$ 81.18	NA
1-1/2"	D	\$ 63.65	\$ 103.01	\$ 20.29	\$ 119.09	\$ 101.37	\$ 115.33	NA
2"	E	\$ 110.38	\$ 180.35	\$ 33.29	\$ 208.94	\$ 177.44	\$ 202.25	NA
3"	F	\$ 243.89	\$ 401.33	\$ 70.45	\$ 465.65	\$ 394.77	\$ 450.61	NA
4"	G	\$ 430.80	\$ 710.70	\$ 122.47	\$ 825.04	\$ 699.04	\$ 798.31	NA
6" & Over	H	\$ 964.85	\$ 1,594.61	\$ 271.09	\$ 1,851.89	\$ 1,568.37	\$ 1,791.73	NA

\* REU - Residential Equivalent Unit (Wright Township Only)

**FIRE PROTECTION RATES- ALL GOVERNMENTAL UNITS**

6"	H	\$ 18.94	10"	J	\$ 52.66
8"	I	\$ 33.62	12"	K	\$ 75.77

**NOTE:** Monthly defined as 1/12th of 365 days.

**CITY OF GRAND RAPIDS, MICHIGAN  
2018 FINAL WATER/SEWER RATE STUDY  
IMPACT OF RATE ADJUSTMENTS ON WHOLESALE CUSTOMER COMMUNITIES  
EFFECTIVE JANUARY 1, 2019**

	<u>2018</u>	<u>2019</u>	<u>PERCENTAGE CHANGE</u>
<b>EAST GRAND RAPIDS</b>			
WATER - SERVICE (MONTHLY)	\$14,728.00	\$17,209.00	16.85%
- COMMODITY (100 CF)	\$1.07	\$1.11	3.74%
SEWER - SERVICE (MONTHLY)	\$2,198.00	\$2,243.00	2.05%
- COMMODITY (MG)	\$1,834.00	\$1,840.00	0.33%
<b>ADA TWP</b>			
WATER - SERVICE	\$41,158.00	\$42,811.00	4.02%
- COMMODITY	\$1.22	\$1.25	2.46%
SEWER - SERVICE	\$45,942.00	\$46,008.00	0.14%
- COMMODITY	\$2,288.00	\$2,358.00	3.06%
<b>OTTAWA COUNTY</b>			
WATER - SERVICE	\$414.00	\$445.00	7.49%
- COMMODITY	\$1.17	\$1.19	1.71%
<b>GAINES TWP</b>			
SEWER - SERVICE	\$1,488.00	\$1,605.00	7.86%
- COMMODITY	\$1,549.00	\$1,668.00	7.68%
<b>CALEDONIA TWP</b>			
SEWER - SERVICE	\$719.00	\$752.00	4.59%
- COMMODITY	\$4,587.00	\$4,497.00	-1.96%

**NOTE: Monthly defined as 1/12th of 365 days.**

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER SUPPLY SYSTEM FUND  
ANNUAL RATE REVIEW**

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**CITY OF GRAND RAPIDS, MICHIGAN  
WATER SUPPLY SYSTEM FUND  
SYSTEM ADDITIONS AND IMPROVEMENTS  
FOR THE YEAR ENDED JUNE 30, 2018  
TASKS NO. 1, 2, & 3**

COMMUNITY	LOCAL		INTERMEDIATE		PRIMARY		TOTALS	
	FEET	MILES	FEET	MILES	FEET	MILES	FEET	MILES
Grand Rapids								
Construction	13,708	2.60	10,404	1.97	6,301	1.19	30,413	5.76
Abandonment	(10,429)	(1.98)	(5,784)	(1.10)	(103)	(0.02)	(16,316)	(3.10)
CSO Construction	0	0.00	0	0.00	0	0.00	0	0.00
CSO Abandonment	0	0.00	0	0.00	0	0.00	0	0.00
	<u>3,279</u>	<u>0.62</u>	<u>4,620</u>	<u>0.87</u>	<u>6,198</u>	<u>1.17</u>	<u>14,097</u>	<u>2.66</u>
Kentwood								
Construction	1,005	0.19	0	0.00	0	0.00	1,005	0.19
Abandonment	0	0.00	0	0.00	0	0.00	0	0.00
	<u>1,005</u>	<u>0.19</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>1,005</u>	<u>0.19</u>
Cascade Twp.								
Construction	1,335	0.25	7,152	1.35	0	0.00	8,487	1.60
Abandonment	0	0.00	0	0.00	0	0.00	0	0.00
	<u>1,335</u>	<u>0.25</u>	<u>7,152</u>	<u>1.35</u>	<u>0</u>	<u>0.00</u>	<u>8,487</u>	<u>1.60</u>
G.R. Twp.								
Construction	2,513	0.48	1,857	0.35	0	0.00	4,370	0.83
Abandonment	0	0.00	0	0.00	0	0.00	0	0.00
	<u>2,513</u>	<u>0.48</u>	<u>1,857</u>	<u>0.35</u>	<u>0</u>	<u>0.00</u>	<u>4,370</u>	<u>0.83</u>
Tallmadge Twp.								
Construction	0	0.00	0	0.00	0	0.00	0	0.00
Abandonment	0	0.00	0	0.00	0	0.00	0	0.00
	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>
Walker								
Construction	1,287	0.24	6,445	1.22	0	0.00	7,732	1.46
Abandonment	0	0.00	0	0.00	0	0.00	0	0.00
	<u>1,287</u>	<u>0.24</u>	<u>6,445</u>	<u>1.22</u>	<u>0</u>	<u>0.00</u>	<u>7,732</u>	<u>1.46</u>
<b>*TOTAL*</b>	<u><u>9,419</u></u>	<u><u>1.78</u></u>	<u><u>20,074</u></u>	<u><u>3.79</u></u>	<u><u>6,198</u></u>	<u><u>1.17</u></u>	<u><u>35,691</u></u>	<u><u>6.74</u></u>

	CONTRIBUTIONS		
	COMM	OTHER	TOTAL
Integrated	\$ 153,680	\$ -	\$ 153,680
Grand Rapids	1,186,037	-	1,186,037
Walker	1,017,965	-	1,017,965
Kentwood	96,182	-	96,182
Cascade Twp.	925,760	-	925,760
Grand Rapids Twp.	506,828	-	506,828
Tallmadge Twp.	-	-	-
<b>*TOTAL*</b>	<u><u>\$ 3,886,452</u></u>	<u><u>\$ -</u></u>	<u><u>\$ 3,886,452</u></u>

CITY OF GRAND RAPIDS, MICHIGAN  
 WATER SUPPLY SYSTEM FUND  
 OPERATING EXPENSE ALLOCATION BY COST CENTER - TASK #4, PART 1  
 FISCAL YEAR ENDED JUNE 30, 2018

ACTIVITY	EXPENSE BY ACTIVITY	PUMPING STATIONS			WATERMANS			RETAIL CUSTOMER METERING	ENGIN. SERVICES	ADMIN. EXPENSE
		FILTRATION PLANT	PRIMARY	INTERM.	PRIMARY TRANSPORT	INTERMED. TRANSPORT	LOCAL DISTRIBUTION			
253 (4010) 5910	\$ 779,870						\$ 779,870			
536 (2110 / 2700) 5910	2,885,278						2,885,278			
536 (3010:70) 5910	1,064,547							1,064,547		
536 (4510:80) 5910	2,371,180		745,077	1,626,103						
536 (6010 / 6370) 5910	6,807,304				349,487	1,781,948				
536 (6500:90) 5910	7,970,985	7,970,985								
SUBTOTAL OPERATING EXPENSE	21,879,162	7,970,985	745,077	1,626,103	349,487	1,781,948	3,665,148	1,064,547	-	
ADMINISTRATION	2,454,199								2,454,199	
TOTAL	\$ 24,333,361	\$ 7,970,985	\$ 745,077	\$ 1,626,103	\$ 349,487	\$ 1,781,948	\$ 3,665,148	\$ 1,064,547	\$ 2,454,199	

METHOD OF DISTRIBUTION	EXPENSE BY ACTIVITY	PUMPING STATIONS			WATERMANS			RETAIL CUSTOMER METERING	ENGIN. SERVICES	ADMIN. EXPENSE
		FILTRATION PLANT	PRIMARY	INTERM.	PRIMARY TRANSPORT	INTERMED. TRANSPORT	LOCAL DISTRIBUTION			
253 (4010) 5910	100.000%						100.000%			
536 (2110 / 2700) 5910	100.000%						100.000%			
536 (3010:70) 5910	100.000%							100.000%		
536 (4510:80) 5910	100.000%		31.420%	68.580%						
536 (6010 / 6370) 5910	100.000%				5.134%	26.177%				
TOTAL MILES OF MAIN	1,185.09		60.84	310.22	68.689%	814.03				
FILTRATION	100.000%	100.000%								
ADMINISTRATION	100.000%								100.000%	

CITY OF GRAND RAPIDS, MICHIGAN  
 WATER SUPPLY SYSTEM FUND  
 OPERATING EXPENSE ALLOCATION BY GOVERNMENTAL UNIT - TASK #4, PART 2  
 FISCAL YEAR ENDED JUNE 30, 2018

COST CENTER	EXPENSE BY COST CENTER	INTEGRATED SYSTEM	RETAIL						WHOLESALE					
			CITY OF GR	CITY OF WALKER	CITY OF KENTWOOD	CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADGE TOWNSHIP	CITY OF EAST GR	COUNTY OF OTTAWA	ADA TOWNSHIP			
FILTRATION PLANT	\$ 7,970,985	\$ 7,970,985												
PUMPING STATIONS:														
A. PRIMARY TRANSPORT	745,077	745,077												
B. INTERMEDIATE TRANSPORT	1,626,103		1,329,810	54,285	242,008									
WATERMAINS:														
A. PRIMARY TRANSPORT	349,487		289,687	18,498	26,309	9,649	5,344							
B. INTERMEDIATE TRANSPORT	1,781,948		671,956	381,176	316,331	242,291	144,641	25,553						
C. LOCAL DISTRIBUTION	4,675,869		3,419,183	368,552	319,642	259,183	291,868	17,441						
RETAIL CUSTOMER METERING	3,665,148		2,734,640	298,453	250,806	171,089	198,065	12,095						
SUBTOTAL OPERATING EXPENSE	20,814,615	8,716,062	8,445,275	1,120,964	1,155,096	682,212	639,918	55,089						
ENGINEERING SERVICES	1,064,547	445,779	431,929	57,326	59,072	34,896	32,724	2,821						
ADMINISTRATIVE EXPENSE	2,454,199	1,003,336	1,030,337	129,026	132,955	78,542	73,654	6,349						
TOTAL	\$ 24,333,361	\$ 10,165,176	\$ 9,907,541	\$ 1,307,316	\$ 1,347,123	\$ 795,650	\$ 746,296	\$ 64,259	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

W-3

METHOD OF DISTRIBUTION

FILTRATION PLANTS														
PUMPING STATIONS														
A. PRIMARY TRANSPORT	100.00%	100.00%												
B. INTERMEDIATE TRANSPORT	100.00%	100.00%	81.779%	3.338%	14.883%									
MEMO														
WATERMAINS														
TOTAL MILES:		1,185.09												
A. PRIMARY TRANSPORT	100.000%	82.889%	5.293%	7.528%	2.761%	1.529%								
MILES		50.43	3.22	4.58	1.68	0.93								
B. INTERMEDIATE TRANSPORT	100.000%	37.709%	21.391%	17.752%	13.597%	8.117%	1.434%							
MILES		116.98	66.36	55.07	42.18	25.18	4.45							
C. LOCAL DISTRIBUTION	100.000%	73.124%	7.882%	6.836%	5.543%	6.242%	0.373%							
MILES		595.25	64.16	55.65	45.12	50.81	3.04							
RETAIL CUSTOMER METERING (1)	100.000%	74.612%	8.143%	6.843%	4.668%	5.404%	0.330%							
NUMBER OF METERS		59,447.00	6,488.00	5,452.00	3,719.00	4,306.00	263.00							
ENGINEERING SERVICES (2)	100.000%	40.574%	5.385%	5.549%	3.278%	3.074%	0.265%							
ADMINISTRATIVE EXPENSE (3)	100.000%	41.983%	5.257%	5.417%	3.200%	3.001%	0.259%							

NOTES:

- (1) ALLOCATION BASED ON NUMBER OF METERS.
- (2) ALLOCATION BASED ON DIRECT OPERATING EXPENSE.
- (3) ALLOCATION BASED ON DIRECT OPERATING EXPENSE, ADJUSTED FOR ANY COST ASSIGNABLE EXCLUSIVELY TO GR OR RETAIL COMMUNITIES, IF APPLICABLE.

CITY OF GRAND RAPIDS, MICHIGAN  
 WATER SUPPLY SYSTEM FUND  
 ADJUSTED OPERATING EXPENSE ALLOCATION BY COST CENTER - TASK #5, PART 1  
 FISCAL YEAR ENDED JUNE 30, 2018

METHOD OF DISTRIBUTION	ACTIVITY	ADJUSTED EXPENSE BY ACTIVITY	PUMPING STATIONS		WATERMAINS		RETAIL CUSTOMER METERING	ENGIN. SERVICES	ADMIN. EXPENSE
			FILTRATION PLANT	PRIMARY	INTERM.	PRIMARY TRANSPORT			
253 (4010) 5910	TREASURER-CUSTOMER SERVICE	\$ 852,070					\$ 852,070		
536 (2110 / 2700) 5910	WATER-CUSTOMER SERVICE *	2,566,536					2,566,536		
536 (3010:70) 5910	ENGINEERING	1,117,999						1,117,999	
536 (4510:80) 5910	COLDBROOK DISTRIBUTION	2,439,559		766,563	1,672,996				
536 (6010 / 6370) 5910	FIELD OPERATIONS	6,965,057				357,586	1,823,243	4,784,228	
536 (6500:90) 5910	FILTRATION	8,135,621	8,135,621						
536 (1000:10 / 8000) 5910	SUBTOTAL OPERATING EXPENSE	22,076,842	8,135,621	766,563	1,672,996	357,586	1,823,243	4,784,228	1,117,999
	ADMINISTRATION	2,604,633							2,604,633
	TOTAL	\$ 24,681,475	\$ 8,135,621	\$ 766,563	\$ 1,672,996	\$ 357,586	\$ 1,823,243	\$ 4,784,228	\$ 1,117,999

\* Reflects adjustment for circuit breaker provisions per the third amendment to W/S service agreements.

METHOD OF DISTRIBUTION	ADJUSTED EXPENSE BY ACTIVITY	FILTRATION PLANT	PRIMARY	INTERM.	PRIMARY TRANSPORT	INTERMED. TRANSPORT	LOCAL DISTRIBUTION	RETAIL CUSTOMER METERING	ENGIN. SERVICES	ADMIN. EXPENSE
253 (4010) 5910	TREASURER-CUSTOMER SERVICE							\$ 852,070		
536 (2110 / 2700) 5910	WATER-CUSTOMER SERVICE							2,566,536		
536 (3010:70) 5910	ENGINEERING								1,117,999	
536 (4510:80) 5910	COLDBROOK DISTRIBUTION		766,563	1,672,996						
536 (6010 / 6370) 5910	FIELD OPERATIONS				357,586	1,823,243	4,784,228			
536 (6500:90) 5910	FILTRATION	8,135,621								
536 (1000:10 / 8000) 5910	SUBTOTAL OPERATING EXPENSE	8,135,621	766,563	1,672,996	357,586	1,823,243	4,784,228	3,418,606	1,117,999	-
	ADMINISTRATION									2,604,633
	TOTAL	\$ 8,135,621	\$ 766,563	\$ 1,672,996	\$ 357,586	\$ 1,823,243	\$ 4,784,228	\$ 3,418,606	\$ 1,117,999	\$ 2,604,633

CITY OF GRAND RAPIDS, MICHIGAN  
 WATER SUPPLY SYSTEM FUND  
 ADJUSTED OPERATING EXPENSE ALLOCATION BY GOVERNMENTAL UNIT - TASK #5, PART 2  
 FISCAL YEAR ENDED JUNE 30, 2018

COST CENTER	ADJUSTED EXPENSE BY COST CENTER	INTEGRATED SYSTEM	RETAIL						WHOLESALE					
			CITY OF GR	CITY OF WALKER	CITY OF KENTWOOD	CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADGE TOWNSHIP	CITY OF EAST GR	COUNTY OF OTTAWA	ADA TOWNSHIP			
FILTRATION PLANT	\$ 8,135,621	\$ 8,135,621												
PUMPING STATIONS:														
A. PRIMARY TRANSPORT	766,563	766,563												
B. INTERMEDIATE TRANSPORT	1,672,996		1,368,159	55,850	248,987									
WATERMAINS:														
A. PRIMARY TRANSPORT	357,586		296,400	18,927	26,919	9,873	5,467							
B. INTERMEDIATE TRANSPORT	1,823,243		687,527	390,010	323,662	247,906	147,993	26,145						
C. LOCAL DISTRIBUTION	4,784,228		3,498,418	377,093	327,050	265,190	298,632	17,845						
RETAIL CUSTOMER METERING	3,418,606		2,550,691	278,377	233,935	159,581	184,741	11,281						
SUBTOTAL OPERATING EXPENSE	20,958,843	8,902,184	8,401,195	1,120,257	1,160,553	682,550	636,833	55,271						
ENGINEERING SERVICES	1,117,999	474,869	448,139	59,757	61,904	36,413	33,965	2,952						
ADMINISTRATIVE EXPENSE	2,604,633	1,081,609	1,078,897	136,108	140,997	82,938	77,361	6,723						
TOTAL	\$ 24,681,475	\$ 10,458,662	\$ 9,928,231	\$ 1,316,122	\$ 1,363,454	\$ 801,901	\$ 748,159	\$ 64,946	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

W-5

METHOD OF DISTRIBUTION

FILTRATION PLANTS														
PUMPING STATIONS														
A. PRIMARY TRANSPORT	100.00%	100.00%												
B. INTERMEDIATE TRANSPORT	100.00%	100.00%	81.779%	3.338%	14.883%									
MEMO														
WATERMAINS														
TOTAL MILES:		1,185.09												
A. PRIMARY TRANSPORT	100.000%	82.889%	50.43	5.293%	7.528%	2.761%	1.529%							
MILES		50.43	3.22	4.58	1.68	0.93								
B. INTERMEDIATE TRANSPORT	100.000%	37.709%	21.391%	17.752%	13.597%	13.597%	8.117%	1.434%						
MILES		116.98	66.36	55.07	42.18	25.18	4.45							
C. LOCAL DISTRIBUTION	100.000%	73.124%	7.882%	6.836%	5.543%	5.543%	6.242%	0.373%						
MILES		595.25	64.16	55.65	45.12	50.81	3.04							
RETAIL CUSTOMER METERING (1)	100.000%	74.612%	8.143%	6.843%	4.668%	4.668%	5.404%	0.330%						
NUMBER OF METERS		59,447.00	6,488.00	5,452.00	3,719.00	4,306.00	263.00							
ENGINEERING SERVICES (2)	100.000%	40.084%	5.345%	5.537%	3.257%	3.257%	3.038%	0.264%						
ADMINISTRATIVE EXPENSE (3)	100.000%	41.422%	5.226%	5.413%	3.184%	3.184%	2.970%	0.258%						

NOTES:

- (1) ALLOCATION BASED ON NUMBER OF METERS.
- (2) ALLOCATION BASED ON DIRECT OPERATING EXPENSE.
- (3) ALLOCATION BASED ON DIRECT OPERATING EXPENSE, ADJUSTED FOR ANY COST ASSIGNABLE EXCLUSIVELY TO GR OR RETAIL COMMUNITIES, IF APPLICABLE.

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER SUPPLY SYSTEM FUND  
ADJUSTED ACTUAL EXPENSE  
YEAR ENDED JUNE 30, 2018  
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: ADMINISTRATION

EXPENDITURE SUB-OBJECT		OPERATING	ADJUSTED	ADJUSTED
OBJ	DESCRIPTION	EXPENSES	COST	CURRENT
			FACTORS	ANNUAL
				EXPENSES
7020	PERMANENT EMPLOYEES	\$ 360,271.02	\$ 43,794.10	\$ 404,065.12
7040	TEMPORARY EMPLOYEES	9,734.58	219.03	9,953.61
7105	EMPLOYERS SOCIAL SECURITY	24,465.80	3,310.48	27,776.28
7110	HOSPITALIZATION INSURANCE	54,488.28	26,725.25	81,213.53
7115	RETIREE HEALTH CARE	41,489.23	5,244.44	46,733.67
7120	RETIREMENT FUND CONTRIBUTION	80,524.13	3,875.96	84,400.09
7135	UNEMPLOYMENT COMPENSATION	769.03	48.00	817.03
7175	FOOD/CLEAN/CAR ALLOW	2,398.05	-	2,398.05
	TOTAL PERSONAL SERVICES	<u>574,140.12</u>	<u>83,217.26</u>	<u>657,357.38</u>
7520	SUPPLIES	2,800.63	-	2,800.63
8510	POSTAGE	75.28	-	75.28
	TOTAL SUPPLIES	<u>2,875.91</u>	<u>-</u>	<u>2,875.91</u>
9480	COMPUTER SERVICES	27,429.96	1,673.04	29,103.00
9460	ENGINEERING SERVICES	11,081.95	-	11,081.95
8010	CONTRACTUAL SERVICES	97,022.16	-	97,022.16
8450	GENERAL LIABILITY INSURANCE/CLAIMS	247,466.00	14,402.00	261,868.00
8400	INSURANCE PREMIUMS	241,171.00	-	241,171.00
8500	TELEPHONE	3,102.99	-	3,102.99
9000	PRINTING & PUBLISHING	808.94	-	808.94
9200	ELECTRICITY	53,148.74	-	53,148.74
9180	WATER	4,977.11	-	4,977.11
9210	NATURAL GAS	18,019.76	-	18,019.76
9340	MAINTENANCE SERVICE	29,473.36	-	29,473.36
9430	BUILDINGS RENTALS OR LEASE	5,496.24	-	5,496.24
9410	EQUIPMENT RENTALS OR LEASE	2,761.07	-	2,761.07
9400	LAND RENTAL OR LEASE	1,613.53	-	1,613.53
9470	VEHICLE USAGE/CAR MILEAGE	6,428.19	-	6,428.19
9100	PROFESSIONAL DEVELOPMENT	40,735.34	-	40,735.34
9110	OTHER TRAVEL & TRAINING	4,929.68	-	4,929.68
9130	LOCAL BUSINESS EXPENSE	737.39	-	737.39
9150	MEMBERSHIPS	18,692.00	-	18,692.00
7910	SUBSCRIPTIONS AND PUBLICATIONS	2,002.05	-	2,002.05
8240	FEES	28,490.93	-	28,490.93
8030	ADMINISTRATIVE SERVICES (ICB)	86,770.85	(86,770.85)	-
9650	BAD DEBT WRITE-OFFS	241.82	-	241.82
8011	CONTRACT EMPLOYEES - TEMP SERVICES	878.49	-	878.49
	TOTAL OTHER SERVICES & CHARGES	<u>933,479.55</u>	<u>(70,695.81)</u>	<u>862,783.74</u>
9760	EQUIPMENT	49,973.91	-	49,973.91
9840	SOFTWARE	2,903.35	-	2,903.35
9880	CONSTRUCTION IN PROGRESS	51,032.14	-	51,032.14
	TOTAL CAPITAL	<u>103,909.40</u>	<u>-</u>	<u>103,909.40</u>
9955	OPERATING TRANS-MISC	84,919.00	-	84,919.00
9952	OPERATING TRANSFERS-A87 COST	754,875.00	137,913.00	892,788.00
	TOTAL TRANSFERS/FEES	<u>839,794.00</u>	<u>137,913.00</u>	<u>977,707.00</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 2,454,198.98</u>	<u>\$ 150,434.45</u>	<u>\$ 2,604,633.43</u>

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER SUPPLY SYSTEM FUND  
ADJUSTED ACTUAL EXPENSE  
YEAR ENDED JUNE 30, 2018  
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: CUSTOMER SERVICES

EXPENDITURE SUB-OBJECT		OPERATING	ADJUSTED	ADJUSTED
OBJ	DESCRIPTION	EXPENSES	COST FACTORS	CURRENT ANNUAL EXPENSES
7020	PERMANENT EMPLOYEES	\$ 1,486,704.43	\$ 33,450.85	\$ 1,520,155.28
7025	ACT.ASSIGNMENT	4,883.05	109.87	4,992.92
7040	TEMPORARY EMPLOYEES	808.07	18.18	826.25
7050	REGULAR HOURLY RATE	494.28	11.12	505.40
7055	TIME & ONE-HALF	118,823.61	2,673.53	121,497.14
7105	EMPLOYERS SOCIAL SECURITY	114,642.34	2,579.45	117,221.79
7110	HOSPITALIZATION INSURANCE	367,211.28	83,063.19	450,274.47
7115	RETIREE HEALTH CARE	182,893.16	3,493.26	186,386.42
7120	RETIREMENT FUND CONTRIBUTION	344,719.14	(18,442.47)	326,276.67
7135	UNEMPLOYMENT COMPENSATION	2,041.79	-	2,041.79
7165	SHIFT DIFFERENTIAL	1,199.27	-	1,199.27
	TOTAL PERSONAL SERVICES	<u>2,624,420.42</u>	<u>106,956.98</u>	<u>2,731,377.40</u>
7520	SUPPLIES	860,060.45	-	860,060.45
8510	POSTAGE	8,539.08	-	8,539.08
7670	CLOTHING/CLEANING ALLOWANCE	6,252.96	-	6,252.96
	TOTAL SUPPLIES	<u>874,852.49</u>	<u>-</u>	<u>874,852.49</u>
9480	COMPUTER SERVICES	128,145.96	7,814.04	135,960.00
9480	COMPUTER SERVICES (CIS-DEPR & ROI)	-	408,604.00	408,604.00
8010	CONTRACTUAL SERVICES	662,484.89	71,000.00	733,484.89
8500	TELEPHONE	11,779.92	-	11,779.92
9340	MAINTENANCE SERVICE	2,202.15	-	2,202.15
9410	EQUIPMENT RENTALS OR LEASE	5,060.24	-	5,060.24
9470	VEHICLE RENTAL/CAR MILEAGE	9,206.47	-	9,206.47
9100	PROFESSIONAL DEVELOPMENT	5,578.66	-	5,578.66
9110	OTHER TRAVEL & TRAINING	742.00	-	742.00
9650	BAD DEBT WRITE-OFFS	(728.48)	-	(728.48)
8011	CONTRACT EMPLOYEES - TEMP SERVICES	55,713.92	-	55,713.92
9450	311 CALL CENTER SERVICES	597,275.00	-	597,275.00
9440	FLEET MANAGEMENT EQUIPMENT	164,262.80	-	164,262.80
	TOTAL OTHER SERVICES & CHARGES	<u>1,641,723.53</u>	<u>487,418.04</u>	<u>2,129,141.57</u>
9800	FURNITURE	11.99	-	11.99
9760	EQUIPMENT	4,972.08	-	4,972.08
9840	SOFTWARE	3,266.49	-	3,266.49
	TOTAL CAPITAL	<u>8,250.56</u>	<u>-</u>	<u>8,250.56</u>
9952	OPERATING TRANSFERS-A87 COST	<u>115,823.00</u>	<u>(70,866.00)</u>	<u>44,957.00</u>
	TOTAL TRANSFERS/FEES	<u>115,823.00</u>	<u>(70,866.00)</u>	<u>44,957.00</u>
	ORGANIZATIONAL UNIT TOTAL (GROSS)	\$ 5,265,070.00	\$ 523,509.02	\$ 5,788,579.02
	LESS: SDSF CONTRIBUTION *	(2,379,792.00)	(842,250.99)	(3,222,042.99)
	ORGANIZATIONAL UNIT TOTAL (NET)	<u>\$ 2,885,278.00</u>	<u>\$ (318,741.97)</u>	<u>\$ 2,566,536.03</u>

\* Reflects adjustment for circuit breaker provisions per the third amendment to W/S service agreements.

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER SUPPLY SYSTEM FUND  
ADJUSTED ACTUAL EXPENSE  
YEAR ENDED JUNE 30, 2018  
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: ENGINEERING

EXPENDITURE SUB-OBJECT		OPERATING	ADJUSTED	ADJUSTED
OBJ	DESCRIPTION	EXPENSES	COST	CURRENT
			FACTORS	ANNUAL
				EXPENSES
7020	PERMANENT EMPLOYEES	\$ 482,259.84	\$ 31,650.85	\$ 513,910.69
7025	ACT.ASSIGNMENT	764.03	17.19	781.22
7040	TEMPORARY EMPLOYEES	15,312.04	344.52	15,656.56
7055	TIME & ONE-HALF	7,765.60	174.73	7,940.33
7105	EMPLOYERS SOCIAL SECURITY	36,954.28	831.47	37,785.75
7110	HOSPITALIZATION INSURANCE	98,690.62	22,323.82	121,014.44
7115	RETIREE HEALTH CARE	60,643.85	1,158.30	61,802.15
7120	RETIREMENT FUND CONTRIBUTION	114,306.27	(6,115.39)	108,190.88
7135	UNEMPLOYMENT COMPENSATION	969.93	-	969.93
	TOTAL PERSONAL SERVICES	<u>817,666.46</u>	<u>50,385.49</u>	<u>868,051.95</u>
7520	SUPPLIES	1,510.68	-	1,510.68
	TOTAL SUPPLIES	<u>1,510.68</u>	<u>-</u>	<u>1,510.68</u>
9480	COMPUTER SERVICES	50,289.00	3,067.00	53,356.00
9460	ENGINEERING SERVICES	31,861.04	-	31,861.04
8010	CONTRACTUAL SERVICES	97,388.17	-	97,388.17
8500	TELEPHONE	4,237.19	-	4,237.19
9000	PRINTING & PUBLISHING	24.95	-	24.95
9340	MAINTENANCE SERVICE	1,082.50	-	1,082.50
9410	EQUIPMENT RENTALS OR LEASE	8,320.99	-	8,320.99
9470	VEHICLE RENTAL/CAR MILEAGE	613.56	-	613.56
9100	PROFESSIONAL DEVELOPMENT	80.75	-	80.75
9150	MEMBERSHIPS	50.00	-	50.00
7910	SUBSCRIPTIONS & PUBLICATIONS	187.50	-	187.50
8011	CONTRACT EMPLOYEES - TEMP SERVICES	1,620.73	-	1,620.73
9440	FLEET MANAGEMENT EQUIPMENT	19,368.48	-	19,368.48
	TOTAL OTHER SERVICES & CHARGES	<u>215,124.86</u>	<u>3,067.00</u>	<u>218,191.86</u>
9760	EQUIPMENT	8,245.61	-	8,245.61
	TOTAL CAPITAL	<u>8,245.61</u>	<u>-</u>	<u>8,245.61</u>
9954	OPERATING TRANS-DEV CENTER	21,999.00	-	21,999.00
	TOTAL TRANSFERS/FEEES	<u>21,999.00</u>	<u>-</u>	<u>21,999.00</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 1,064,546.61</u>	<u>\$ 53,452.49</u>	<u>\$ 1,117,999.10</u>

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER SUPPLY SYSTEM FUND  
ADJUSTED ACTUAL EXPENSE  
YEAR ENDED JUNE 30, 2018  
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: DISTRIBUTION

OBJ	EXPENDITURE SUB-OBJECT DESCRIPTION	OPERATING EXPENSES	ADJUSTED COST FACTORS	ADJUSTED CURRENT ANNUAL EXPENSES
7020	PERMANENT EMPLOYEES	\$ 250,650.25	\$ 20,039.63	\$ 270,689.88
7025	ACT.ASSIGNMENT	62.52	1.41	63.93
7040	TEMPORARY EMPLOYEES	436.08	9.81	445.89
7055	TIME & ONE-HALF	8,231.14	185.20	8,416.34
7105	EMPLOYERS SOCIAL SECURITY	18,296.57	411.67	18,708.24
7110	HOSPITALIZATION INSURANCE	63,987.33	14,473.93	78,461.26
7115	RETIREE HEALTH CARE	31,561.43	602.82	32,164.25
7120	RETIREMENT FUND CONTRIBUTION	59,484.89	(3,182.44)	56,302.45
7135	UNEMPLOYMENT COMPENSATION	360.29	-	360.29
7165	SHIFT DIFFERENTIAL	229.08	-	229.08
	TOTAL PERSONAL SERVICES	<u>433,299.58</u>	<u>32,542.03</u>	<u>465,841.61</u>
7520	SUPPLIES	67,707.13	-	67,707.13
	TOTAL SUPPLIES	<u>67,707.13</u>	<u>-</u>	<u>67,707.13</u>
9480	COMPUTER SERVICES	13,715.04	836.96	14,552.00
8010	CONTRACTUAL SERVICES	196,413.98	-	196,413.98
8500	TELEPHONE	2,365.27	-	2,365.27
9200	ELECTRICITY	1,514,742.78	-	1,514,742.78
9180	WATER	14,751.29	-	14,751.29
9210	NATURAL GAS	50,197.29	-	50,197.29
9340	MAINTENANCE SERVICE	3,822.96	-	3,822.96
9310	EQUIPMENT REPAIRS	181.90	-	181.90
9410	EQUIPMENT RENTALS OR LEASE	1,538.25	-	1,538.25
8240	FEES	420.00	-	420.00
9440	FLEET MANAGEMENT EQUIPMENT	66,948.48	-	66,948.48
	TOTAL OTHER SERVICES & CHARGES	<u>1,865,097.24</u>	<u>836.96</u>	<u>1,865,934.20</u>
9760	EQUIPMENT	5,075.75	35,000.00	40,075.75
	TOTAL CAPITAL	<u>5,075.75</u>	<u>35,000.00</u>	<u>40,075.75</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 2,371,179.70</u>	<u>\$ 68,378.99</u>	<u>\$ 2,439,558.69</u>

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER SUPPLY SYSTEM FUND  
ADJUSTED ACTUAL EXPENSE  
YEAR ENDED JUNE 30, 2018  
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: FIELD OPERATIONS

	EXPENDITURE SUB-OBJECT	OPERATING EXPENSES	ADJUSTED COST FACTORS	ADJUSTED CURRENT ANNUAL EXPENSES
OBJ	DESCRIPTION			
7020	PERMANENT EMPLOYEES	\$ 1,787,233.90	\$ 64,212.76	\$ 1,851,446.66
7025	ACT.ASSIGNMENT	4,111.76	92.51	4,204.27
7040	TEMPORARY EMPLOYEES	32,155.55	723.50	32,879.05
7055	TIME & ONE-HALF	256,627.38	5,774.12	262,401.50
7105	EMPLOYERS SOCIAL SECURITY	148,797.91	3,347.95	152,145.86
7110	HOSPITALIZATION INSURANCE	411,973.02	93,188.30	505,161.32
7115	RETIREE HEALTH CARE	222,901.61	4,257.42	227,159.03
7120	RETIREMENT FUND CONTRIBUTION	420,137.02	(22,477.33)	397,659.69
7135	UNEMPLOYMENT COMPENSATION	3,373.02	-	3,373.02
7165	SHIFT DIFFERENTIAL	1,260.35	-	1,260.35
	TOTAL PERSONAL SERVICES	<u>3,288,571.52</u>	<u>149,119.23</u>	<u>3,437,690.75</u>
7520	SUPPLIES	524,908.47	-	524,908.47
7670	CLOTHING/CLEANING ALLOWANCE	14,129.43	-	14,129.43
7800	INVENTORY - COST OF GOODS SOLD	(31,492.01)	-	(31,492.01)
	TOTAL SUPPLIES	<u>507,545.89</u>	<u>-</u>	<u>507,545.89</u>
9480	COMPUTER SERVICES	141,585.96	8,634.04	150,220.00
8010	CONTRACTUAL SERVICES	1,681,956.81	-	1,681,956.81
8500	TELEPHONE	23,006.88	-	23,006.88
9200	ELECTRICITY	3,797.76	-	3,797.76
9210	NATURAL GAS	2,515.05	-	2,515.05
9340	MAINTENANCE SERVICE	6,756.48	-	6,756.48
9430	BUILDINGS RENTALS OR LEASE	(1,652.31)	-	(1,652.31)
9410	EQUIPMENT RENTALS OR LEASE	48,496.57	-	48,496.57
9470	VEHICLE USAGE/CAR MILEAGE	266.70	-	266.70
9100	PROFESSIONAL DEVELOPMENT	1,344.50	-	1,344.50
9110	OTHER TRAVEL & TRAINING	1,393.89	-	1,393.89
9150	MEMBERSHIPS	3,661.42	-	3,661.42
8240	FEES	222.70	-	222.70
8011	CONTRACT EMPLOYEES - TEMP SERVICES	115,025.12	-	115,025.12
9440	FLEET MANAGEMENT EQUIPMENT	879,893.62	-	879,893.62
	TOTAL OTHER SERVICES & CHARGES	<u>2,908,271.15</u>	<u>8,634.04</u>	<u>2,916,905.19</u>
9760	EQUIPMENT	102,915.13	-	102,915.13
	TOTAL CAPITAL	<u>102,915.13</u>	<u>-</u>	<u>102,915.13</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 6,807,303.69</u>	<u>\$ 157,753.27</u>	<u>\$ 6,965,056.96</u>

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER SUPPLY SYSTEM FUND  
ADJUSTED ACTUAL EXPENSE  
YEAR ENDED JUNE 30, 2018  
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: LAKE MI. FILTRATION

OBJ	EXPENDITURE SUB-OBJECT DESCRIPTION	OPERATING EXPENSES	ADJUSTED COST FACTORS	ADJUSTED CURRENT ANNUAL EXPENSES
7020	PERMANENT EMPLOYEES	\$ 1,795,010.78	\$ 92,819.74	\$ 1,887,830.52
7025	ACT.ASSIGNMENT	5,470.82	123.09	5,593.91
7050	REGULAR HOURLY RATE	2,470.43	55.58	2,526.01
7055	TIME & ONE-HALF	135,247.88	3,043.08	138,290.96
7105	EMPLOYERS SOCIAL SECURITY	136,839.26	7,089.88	143,929.14
7110	HOSPITALIZATION INSURANCE	423,261.59	110,143.77	533,405.36
7115	RETIREE HEALTH CARE	219,906.04	10,738.21	230,644.25
7120	RETIREMENT FUND CONTRIBUTION	414,487.19	(10,152.06)	404,335.13
7135	UNEMPLOYMENT COMPENSATION	2,440.86	73.00	2,513.86
7165	SHIFT DIFFERENTIAL	8,518.01	-	8,518.01
7175	FOOD/CLEAN/CAR ALLOW	50.00	-	50.00
	TOTAL PERSONAL SERVICES	<u>3,143,702.86</u>	<u>213,934.29</u>	<u>3,357,637.15</u>
7520	SUPPLIES	(7,701.46)	-	(7,701.46)
8510	POSTAGE	573.27	-	573.27
7670	CLOTHING/CLEANING ALLOWANCE	3,651.76	-	3,651.76
7800	INVENTORY - COST OF GOODS SOLD	7,235.92	-	7,235.92
7530	PROCESS CHEMICALS	742,813.32	-	742,813.32
	TOTAL SUPPLIES	<u>746,572.81</u>	<u>-</u>	<u>746,572.81</u>
9480	COMPUTER SERVICES	146,295.00	8,921.00	155,216.00
8010	CONTRACTUAL SERVICES	205,773.11	-	205,773.11
8500	TELEPHONE	17,949.51	-	17,949.51
9200	ELECTRICITY	2,456,233.25	(58,174.00)	2,398,059.25
9210	NATURAL GAS	126,767.43	-	126,767.43
9340	MAINTENANCE SERVICE	744,407.64	-	744,407.64
9310	EQUIPMENT REPAIRS	2,954.44	-	2,954.44
9410	EQUIPMENT RENTALS OR LEASE	4,058.89	-	4,058.89
9470	VEHICLE USAGE/CAR MILEAGE	142.20	-	142.20
9100	PROFESSIONAL DEVELOPMENT	650.00	-	650.00
9110	OTHER TRAVEL & TRAINING	2,545.54	-	2,545.54
9130	LOCAL BUSINESS EXPENSE	150.00	-	150.00
9150	MEMBERSHIPS	1,110.00	-	1,110.00
8240	FEES	9,673.29	-	9,673.29
9190	REFUSE COLLECTION CHARGES	5,687.76	-	5,687.76
8011	CONTRACT EMPLOYEES - TEMP SERVICES	130,532.32	-	130,532.32
9440	FLEET MANAGEMENT EQUIPMENT	48,952.08	-	48,952.08
9550	MISCELLANEOUS	44.99	-	
	TOTAL OTHER SERVICES & CHARGES	<u>3,903,927.45</u>	<u>(49,253.00)</u>	<u>3,854,629.46</u>
9800	FURNITURE	5,041.65	-	5,041.65
9760	EQUIPMENT	171,293.83	-	171,293.83
9840	SOFTWARE	445.90	-	445.90
	TOTAL CAPITAL	<u>176,781.38</u>	<u>-</u>	<u>176,781.38</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 7,970,984.50</u>	<u>\$ 164,681.29</u>	<u>\$ 8,135,620.80</u>

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER SUPPLY SYSTEM FUND  
ADJUSTED ACTUAL EXPENSE  
YEAR ENDED JUNE 30, 2018  
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: TREASURER - CUSTOMER SERV'S

EXPENDITURE SUB-OBJECT		OPERATING	ADJUSTED	ADJUSTED
NO.	DESCRIPTION	EXPENSES	COST	CURRENT
			FACTORS	ANNUAL
				EXPENSES
7020	PERMANENT EMPLOYEES	\$ 101,630.61	\$ 2,286.69	\$ 103,917.30
7025	ACT.ASSIGNMENT	303.23	6.82	310.05
7055	TIME & ONE-HALF	416.61	9.37	425.98
7105	EMPLOYERS SOCIAL SECURITY	7,210.95	162.25	7,373.20
7110	HOSPITALIZATION INSURANCE	24,318.72	5,500.89	29,819.61
7115	RETIREE HEALTH CARE	12,427.12	237.36	12,664.48
7120	RETIREMENT FUND CONTRIBUTION	23,425.49	(1,253.26)	22,172.23
7135	UNEMPLOYMENT COMPENSATION	138.80	-	138.80
	TOTAL PERSONAL SERVICES	<u>169,871.53</u>	<u>6,950.12</u>	<u>176,821.65</u>
7520	SUPPLIES	2,393.28	-	2,393.28
	TOTAL SUPPLIES	<u>2,393.28</u>	<u>-</u>	<u>2,393.28</u>
7270	HOME OWNERSHIP GRANT	200.00	-	200.00
9480	COMPUTER SERVICES	29,417.04	1,711.96	31,129.00
8010	CONTRACTUAL SERVICES	1,500.46	-	1,500.46
8450	GENERAL LIABILITY INSURANCE/CLAIMS	2,837.00	372.00	3,209.00
8500	TELEPHONE	29.33	-	29.33
9430	BUILDINGS RENTALS OR LEASE	8,583.36	-	8,583.36
9470	VEHICLE USAGE/CAR MILEAGE	28,396.20	-	28,396.20
8240	FEES	508,833.41	63,166.59	572,000.00
8011	CONTRACT EMPLOYEES - TEMP SERVICES	27,807.90	-	27,807.90
	TOTAL OTHER SERVICES & CHARGES	<u>607,604.70</u>	<u>65,250.55</u>	<u>672,855.25</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 779,869.51</u>	<u>\$ 72,200.67</u>	<u>\$ 852,070.18</u>

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER SUPPLY SYSTEM FUND  
ADJUSTED ACTUAL EXPENSE  
YEAR ENDED JUNE 30, 2018  
RATE STUDY- TASKS NO. 4 & 5**

ORGANIZATIONAL SUMMARY

OBJ	EXPENDITURE SUB-OBJECT DESCRIPTION	OPERATING EXPENSES	ADJUSTED COST FACTORS	ADJUSTED CURRENT ANNUAL CURRENT
7020	PERMANENT EMPLOYEES	\$ 6,263,760.83	\$ 288,254.62	\$ 6,552,015.45
7025	ACT.ASSIGNMENT	15,595.41	350.89	15,946.30
7040	TEMPORARY EMPLOYEES	58,446.32	1,315.04	59,761.36
7050	REGULAR HOURLY RATE	2,964.71	66.70	3,031.41
7055	TIME & ONE-HALF	527,112.22	11,860.03	538,972.25
7105	EMPLOYERS SOCIAL SECURITY	487,207.11	17,733.15	504,940.26
7110	HOSPITALIZATION INSURANCE	1,443,930.84	355,419.15	1,799,349.99
7115	RETIREE HEALTH CARE	771,822.44	25,731.81	797,554.25
7120	RETIREMENT FUND CONTRIBUTION	1,457,084.13	(57,746.99)	1,399,337.14
7135	UNEMPLOYMENT COMPENSATION	10,093.72	121.00	10,214.72
7165	SHIFT DIFFERENTIAL	11,206.71	-	11,206.71
7175	FOOD/CLEAN/CAR ALLOW	2,448.05	-	2,448.05
	TOTAL PERSONAL SERVICES	<u>11,051,672.49</u>	<u>643,105.40</u>	<u>11,694,777.89</u>
7520	SUPPLIES	1,451,679.18	-	1,451,679.18
8510	POSTAGE	9,187.63	-	9,187.63
7670	CLOTHING/CLEANING ALLOWANCE	24,034.15	-	24,034.15
7800	INVENTORY - COST OF GOODS SOLD	(24,256.09)	-	(24,256.09)
7530	PROCESS CHEMICALS	742,813.32	-	742,813.32
	TOTAL SUPPLIES	<u>2,203,458.19</u>	<u>-</u>	<u>2,203,458.19</u>
7270	HOME OWNERSHIP GRANT	200.00	-	200.00
9480	COMPUTER SERVICES	536,877.96	32,658.04	569,536.00
9480	COMPUTER SERVICES (CIS-DEPR & ROI)	-	408,604.00	408,604.00
9460	ENGINEERING SERVICES	42,942.99	-	42,942.99
8010	CONTRACTUAL SERVICES	2,942,539.58	71,000.00	3,013,539.58
8450	GENERAL LIABILITY INSURANCE / CLAIMS	250,303.00	14,774.00	265,077.00
8400	INSURANCE PREMIUMS	241,171.00	-	241,171.00
8500	TELEPHONE	62,471.09	-	62,471.09
9000	PRINTING & PUBLISHING	833.89	-	833.89
9200	ELECTRICITY	4,027,922.53	(58,174.00)	3,969,748.53
9180	WATER	19,728.40	-	19,728.40
9210	NATURAL GAS	197,499.53	-	197,499.53
9340	MAINTENANCE SERVICE	787,745.09	-	787,745.09
9310	EQUIPMENT REPAIRS	3,136.34	-	3,136.34
9430	BUILDINGS RENTALS OR LEASE	12,427.29	-	12,427.29
9410	EQUIPMENT RENTALS OR LEASE	70,236.01	-	70,236.01
9400	LAND RENTAL OR LEASE	1,613.53	-	1,613.53
9470	VEHICLE RENTAL/CAR MILEAGE	45,053.32	-	45,053.32
9100	PROFESSIONAL DEVELOPMENT	48,389.25	-	48,389.25
9110	OTHER TRAVEL AND TRAINING	9,611.11	-	9,611.11
9130	LOCAL BUSINESS EXPENSE	887.39	-	887.39
9150	MEMBERSHIPS	23,513.42	-	23,513.42
7910	PUBLICATIONS AND SUBSCRIPTIONS	2,189.55	-	2,189.55
8240	FEES	547,640.33	63,166.59	610,806.92
8030	ADMINISTRATIVE SERVICES	86,770.85	(86,770.85)	-
9650	BAD DEBT WRITE-OFFS	(486.66)	-	(486.66)
9190	REFUSE COLLECTION CHARGES	5,687.76	-	5,687.76
8011	CONTRACT EMPLOYEES - TEMP SERVICES	331,578.48	-	331,578.48
9450	311 CALL CENTER SERVICES	597,275.00	-	597,275.00
9440	FLEET MANAGEMENT EQUIPMENT	1,179,425.46	-	1,179,425.46
9550	MISCELLANEOUS	44.99	-	-
	TOTAL OTHER SERVICES & CHARGES	<u>12,075,228.48</u>	<u>445,257.78</u>	<u>12,520,441.27</u>
9800	FURNITURE	5,053.64	-	5,053.64
9760	EQUIPMENT	342,476.31	35,000.00	377,476.31
9840	SOFTWARE	6,615.74	-	6,615.74
9880	CONSTRUCTION IN PROGRESS	51,032.14	-	51,032.14
	TOTAL CAPITAL	<u>405,177.83</u>	<u>35,000.00</u>	<u>440,177.83</u>
9954	OPERATING TRANS-DEV CENTER	21,999.00	-	21,999.00
9955	OPERATING TRANS-MISC	84,919.00	-	84,919.00
9952	OPERATING TRANSFERS-A87 COST	870,698.00	67,047.00	937,745.00
	TOTAL TRANSFERS/FEES	<u>977,616.00</u>	<u>67,047.00</u>	<u>1,044,663.00</u>
	GRAND TOTAL- EXPENDITURES	\$ 26,713,152.99	\$ 1,190,410.18	\$ 27,903,518.18
	LESS: SDSF CONTRIBUTION	(2,379,792.00)	(842,250.99)	(3,222,042.99)
	NET TOTAL- EXPENDITURES	<u>\$ 24,333,360.99</u>	<u>\$ 348,159.19</u>	<u>\$ 24,681,475.19</u>

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: August 24, 2018

TO: Molly J. Eastman  
Fiscal Services Manager

FROM: Jenessa B. Carter  
Financial Analyst

**SUBJECT: 2018 WATER RATE STUDY TASK #4  
FY18 OPERATING EXPENSES - WATER PUMPING FACILITIES**

This schedule allocates the integrated and non-integrated adjusted expenses for operating and maintaining the distribution system's pumping stations based on electricity costs. The operating expenses consist of direct labor, utilities, operating and maintenance supplies, repairs and maintenance, and equipment rental.

Attachment

JBC:jbc

ALLOCATION OF COLDBROOK PUMPING TO WATER PUMPING FACILITIES

STATION	ENERGY COST	PERCENT	EXPENDITURE ALLOCATION	
			ACTUAL	ADJUSTED
ALGER	\$ 54,356	3.57%	\$ 85,089	\$ 87,542
BOOSTER A	5,274	0.35%	8,256	8,494
BOOSTER D	63,730	4.21%	99,763	102,640
BRISTOL	34,678	2.29%	54,285	55,850
COLDBROOK	316,550	20.90%	495,526	509,817
COVELL	32,682	2.16%	51,160	52,636
EAST PARIS	154,598	10.21%	242,008	248,987
FRANKLIN	373,029	24.63%	583,940	600,779
LEFFINGWELL	3,167	0.21%	4,958	5,101
LIVINGSTON	246,488	16.27%	385,853	396,980
WILSON	136,313	9.00%	213,385	219,538
BURTON	23,102	1.53%	36,164	37,207
DEAN LAKE	70,776	4.67%	110,793	113,988
TOTAL	<u>\$ 1,514,743</u>	<u>100.00%</u>	<u>\$ 2,371,180</u>	<u>\$ 2,439,559</u>

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 1, 2018

TO: Molly Eastman  
Utility Financial Officer

FROM: Jeff Dood  
Chief Financial Officer

**SUBJECT: 2018 WATER RATE STUDY TASK #5  
KNOWN COST ADJUSTMENTS**

Known cost adjustments by which to adjust FY18 operating costs are listed below.

Expense Object – 7060, 7020, 7040, 7055, 7025, 7045, 7050, 7030, 7035, 7190

GREIU and APA wages were increased by 2.00% in FY2019. Labor negotiations will begin shortly for the next contract which begins with FY2020. As the outcome of these negotiations are unknown at this time, a 2.00% wage increase has also been presumed for FY2020 (same as FY2019). After converting these increases from a 2018 fiscal year to a 2019 calendar year basis as well as factoring in the lump sum payments (if any), the result is a 2.25% factor for both GREIU and APA employees. A blended rate was then computed by weighting the calendar year percentages according to the percentage of Water Fund employees in each union (84% GREIU and 16% APA). Executive and non-reps amounted to less than 3% of the population and were therefore excluded. **The wage increase factor to translate FY2018 actual costs to estimated calendar 2019 will be 2.25% [2.25 X 84% + 2.25 X 16%].**

Expense Object – 9480/8450/9952

Adjust FY2018 actual cost to reflect adjustments in charges for central services rendered by the Information Technology Fund (data charges), the Insurance Payment Fund (property and general liability) and the General Operating Fund (A-87 cost allocation). The “Exhibit” workbook (inclusive of cost center allocations) maintained by the Budget Office has been utilized to blend FY2019 and FY2020 budget amounts thus arriving at an estimated 2019 calendar year rate as follows:

<b>9480-Data Charges</b>			
Cost Center	FY2019 Request	FY2020 Forecast	Calendar 2019 Est.
253-4010-5910	\$30,696	\$31,562	<b>\$31,129</b>
536-1000-5910	\$28,698	\$29,507	<b>\$29,103</b>
536-2110-5910	\$134,070	\$137,850	<b>\$135,960</b>
536-3010-5910	\$52,614	\$54,098	<b>\$53,356</b>
536-4510-5910	\$14,349	\$14,754	<b>\$14,552</b>
536-6010-5910	\$148,132	\$152,309	<b>\$150,220</b>
536-6510-5910	\$153,058	\$157,375	<b>\$155,216</b>
Total	\$561,617	\$577,455	\$569,536

<b>8450-General Liability Insurance</b>			
Cost Center	FY2019 Request	FY2020 Forecast	Calendar 2019 Estimate
253-4010-5910	\$3,100	\$3,317	<b>\$3,209</b>
536-1000-5910	\$253,013	\$270,724	<b>\$261,868</b>
<b>Total</b>	<b>\$256,113</b>	<b>\$274,041</b>	<b>\$265,077</b>

<b>9952-Contributions to Other Funds (A-87 Allocation)</b>			
Cost Center	FY2019 Request	FY2020 Forecast	Calendar 2019 Estimate
536-1000-5910	\$956,231	\$829,346	<b>\$892,788</b>
536-2110-5910	\$44,512	\$45,402	<b>\$44,957</b>
<b>Total</b>	<b>\$1,000,743</b>	<b>\$874,748</b>	<b>\$937,745</b>

Expense Object - 7105

Increase FY2018 actual FICA expense by 2.25% consistent with the known wage impacts detailed above.

Expense Object - 7110

The FY2019 Trend Report is not completed at this time. However, unfavorable health insurance cost trends were anticipated in the FY2018 Trend Report. Additionally, the three-year smoothing is less favorable for calendar 2019 rates than it was for calendar 2018 rates (and unfavorable for calendar 2020 rates) but has nonetheless helped to limit the projected increase in health insurance to 22.62%. **Increase FY2018 health insurance actual by 22.62% to reflect these anticipated rate changes.**

The projected FY19 (\$15,951) and FY20 (\$18,042) health insurance rates were blended into a 2019 calendar year rate and divided by the FY2018 base amount (\$13,861) to arrive at the increase factor [(((((\$15,951 + \$18,042) / 2)) / \$13,861) - 1) \* 100].

Expense Object - 7115

Retiree health care (“RHC”) rates are projected to trend slightly down in FY2019 (to 12.47%) and FY2020 (to 12.44%) from a base year rate of 12.59% in FY2018. This decrease is amplified by the projected wage adjustments discussed above (lump sum payments not subject to RHC). Additionally, the Water Fund did not have an OPEB adjustment in FY2018 due to changes resulting from the implementation of GASB Statement No. 75.

The RHC factor after consideration of the above rate and wage adjustments is 101.91% (or an increase of 1.91%) for both GREIU and APA members. These factors are then weighted in accordance with union membership within the Water Fund  $[(1.91 * 84\%) + (1.91 * 16\%)]$ .

The factor to establish calendar year 2019's retiree health care cost is 1.91%. **Increase the total of fiscal year 2018's retiree health care by this percent to establish the cost for calendar year 2019.**

Expense Object - 7120

The pension expense factor to translate FY2018 actual costs to estimated calendar 2019 will be 5.35%. **Decrease the total of fiscal year 2018's pension expense by this percent to establish the cost for calendar year 2019.** This reflects the effect of a General Pension rate change decrease from FY18 of 24.59% to a calendar 2019 rate of 22.60% and the projected wage adjustments discussed above (lump sum payments not pensionable). The calendar 2019 rate is a blend of the FY2019 rate (22.93%) and the FY2020 rate (22.26%).

The pension factor after consideration of the above rate and wage adjustments is 94.65% (or a decrease of 5.35%) for GREIU and APA members. These factors are then weighted in accordance with union membership within the Water Fund  $[(-5.35 * 84\%) + (-5.35 * 16\%)]$ .

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 1, 2018

TO: Molly J. Eastman  
Fiscal Services Manager

FROM: David Harran  
Water System Manager

**SUBJECT: 2018 WATER RATE STUDY TASK #5  
KNOWN COST ADJUSTMENTS**

Known cost adjustments by which to adjust FY18 operating costs are listed below:

<u>ACCOUNT</u>	<u>DESCRIPTION</u>	<u>AMOUNT</u>
5910-536-1000-8030	Kent County Community Action Program (ICB)	(\$86,770.85)
5910-536-1000-XXXX	Utility Aide Salary, Taxes, and Benefits (1 FTE)	\$65,532.00
5910-536-4510-9760	Franklin Pump Station Electrical Upgrades	\$35,000.00
5910-536-XXXX-7020	Skilled Trade Bonus Incentives (7.4 FTE)	\$59,200.00
5910-536-6510-9200	Consumers Energy Green Generation participation	(\$58,174.00)
5910-253-4010-8240	Paylt online bill pay program	\$63,166.59
5910-536-2110-8010*	Upgrade of Meter Reading Equipment	\$40,000.00
5910-536-2110-8010*	Cayenta Data Project – Bill XML	\$31,000.00
5910-536-2110-9480*	Cayenta Customer Information System (ROI & Dep)	\$408,604.00

\*Customer service related adjustments are shared with the Sewage Disposal Fund

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: August 17, 2018

TO: Molly J. Eastman  
Fiscal Services Manager

FROM: Jenessa B. Carter  
Financial Analyst

**SUBJECT: 2018 WATER RATE STUDY TASK #6**

The Water Supply System Fund's revenue and volumes by governmental unit for the year ending June 30, 2018, are disclosed on the attached page. In addition, actual volume comparisons for the past five (5) years by governmental unit are included herein.

Attachments

JBC:jbc

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER SUPPLY SYSTEM FUND  
TASK NO. 6**

DETERMINE WATER VOLUME AND REVENUE BY GOVERNMENTAL ENTITY FOR THE YEAR ENDED JUNE 30, 2018:

RETAIL:	SALES REVENUE		3 YR AVE VOL BILLED
	<u>A</u>	<u>B</u>	<u>(GALLONS)</u>
CITY OF GRAND RAPIDS (1)	\$ 24,928,062.91		6,247,857,748
CITY OF WALKER	3,269,322.52		895,866,884
CITY OF KENTWOOD	4,401,186.16		1,321,957,604
CASCADE TOWNSHIP	3,534,348.63		693,837,320
GRAND RAPIDS TOWNSHIP	2,244,495.24		503,205,032
TALLMADGE TOWNSHIP	206,328.50	39,192.48	30,908,856
SUB-TOTAL RETAIL (2)	<u>\$ 38,583,743.96</u>	<u>\$ 39,192.48</u>	<u>9,693,633,444</u>
WHOLESALE:			
CITY OF E. GRAND RAPIDS (3)	\$ 755,079.35		418,569,580
OTTAWA CO. (4)	1,859,258.16		1,209,789,027
ADA TOWNSHIP	1,234,342.42		472,558,724
SUB-TOTAL WHOLESALE	<u>\$ 3,848,679.93</u>	<u>\$ -</u>	<u>2,100,917,331</u>
TOTAL	<u>\$ 42,432,423.89</u>	<u>\$ 39,192.48</u>	<u>11,794,550,775</u>

REVENUE CLASSIFICATION:

A) 536-1000-5910-6431 RETAIL METERED WATER SALES	38,580,176.46
536-1000-5910-6433 WHOLESALE WATER SALES	3,848,679.93
536-1000-5910-6435 WYOMING WATER SALES	3,567.50
SUB-TOTAL	<u>\$ 42,432,423.89</u>
B) 536-1000-5910-6171 FIRE HYDRANT BILLINGS	39,192.48
TOTAL	<u>\$ 42,471,616.37</u>

- (1) THE VOLUME & REVENUE AMOUNT FOR THE CITY OF WYOMING ARE INCLUDED IN THE GRAND RAPIDS TOTALS.
- (2) A NET REVENUE ACCRUAL OF \$350,166.01 HAS BEEN PRORATED TO ALL RETAIL CUSTOMER COMMUNITIES TO ACCRUE BILLINGS FROM THE LAST READING DATE THROUGH JUNE 30, 2018.
- (3) DUE TO A FAULTY METER AND TIME FOR REPAIR, THE CITY OF EAST GRAND RAPIDS UTILIZED A THREE YEAR AVERAGE TO DETERMINE ANNUAL BILLED VOLUME IN FY 2016, PER MUNICIPAL CODE SEC. 2.107.
- (4) OTTAWA COUNTY RATES ARE CALCULATED BASED ON MOST RECENT FISCAL YEAR BILLED VOLUME PER CONTRACT.

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER SUPPLY SYSTEM FUND  
2018 RATE STUDY TASK NO. 6**

VOLUME COMPARISONS FOR FIVE (5) YEARS BY GOVERNMENTAL UNIT \*  
VOLUME = 1,000 GALLONS

<u>MUNICIPALITY</u>	<u>FY14</u>		<u>FY15</u>		<u>FY16</u>		<u>FY17</u>		<u>FY18</u>		<u>FY14 - FY18</u>
	<u>VOL BILLED</u>	<u>VOL BILLED</u>	<u>% CHANGE</u>								
GRAND RAPIDS	6,168,995	5,992,342	-2.86%	6,102,682	1.84%	6,294,410	3.14%	6,346,480	0.83%		2.88%
WALKER	904,358	850,477	-5.96%	853,911	0.40%	893,794	4.67%	939,897	5.16%		3.93%
KENTWOOD	1,298,223	1,236,055	-4.79%	1,274,046	3.07%	1,314,005	3.14%	1,377,822	4.86%		6.13%
CASCADE TWP	616,971	597,335	-3.18%	633,446	6.05%	708,744	11.89%	739,323	4.31%		19.83%
GRAND RAPIDS TWP	480,353	475,723	-0.96%	473,584	-0.45%	495,024	4.53%	541,008	9.29%		12.63%
TALLMADGE TWP	21,621	21,283	-1.56%	24,635	15.75%	30,912	25.48%	37,179	20.27%		71.96%
EAST GRAND RAPIDS**	454,401	456,742	0.52%	416,499	-8.81%	419,574	0.74%	419,637	0.02%		-7.65%
OTTAWA COUNTY	898,135	900,454	0.26%	1,033,701	14.80%	1,167,086	12.90%	1,209,789	3.66%		34.70%
ADA TWP	454,141	444,487	-2.13%	472,046	6.20%	482,549	2.22%	463,080	-4.03%		1.97%
<b>TOTAL</b>	<b>11,297,198</b>	<b>10,974,896</b>	<b>-2.85%</b>	<b>11,284,549</b>	<b>2.82%</b>	<b>11,806,098</b>	<b>4.62%</b>	<b>12,074,215</b>	<b>2.27%</b>		<b>6.88%</b>

VOLUME PUMPED	12,997,000	12,362,000		12,684,000		12,649,000		13,525,000
% BILLED TO PUMPED	86.9%	88.8%		89.0%		93.3%		89.3%

GRAND RAPIDS VOLUME COMPARED TO  
CUSTOMER COMMUNITIES

<u>VOLUME = 1,000 GALLONS</u>	<u>FY14</u>		<u>FY15</u>		<u>FY16</u>		<u>FY17</u>		<u>FY18</u>		
	<u>VOL BILLED</u>	<u>VOL BILLED</u>	<u>% OF TOTAL</u>								
GRAND RAPIDS	6,168,995	5,992,342	54.60%	6,102,682	54.08%	6,294,410	53.31%	6,346,480	52.56%		
CUSTOMER COMMUNITIES	5,128,203	4,982,554	45.40%	5,181,867	45.92%	5,511,688	46.69%	5,727,735	47.44%		
<b>TOTAL</b>	<b>11,297,198</b>	<b>10,974,896</b>	<b>100.00%</b>	<b>11,284,549</b>	<b>100.00%</b>	<b>11,806,098</b>	<b>100.00%</b>	<b>12,074,215</b>	<b>100.00%</b>		

\* Volumes were restated from previous Rate Studies to reflect actual billings without adjustment for accrued revenues.

\*\* Volume billed for FY15 & FY16 is estimated based on three year average due to a faulty meter.

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
TASK NO. 7**

OPERATING REVENUES OTHER THAN FROM SALES OF WATER:

536-1000-5910			
	4788	CONTRACTOR UNDERGROUND LICENSE	\$ 5,580.00
	4916	TAPPING PERMITS	44,625.00
	6260	SERVICE FEES-GENERAL	377,217.65
	6265	SERVICES FOR CONTRACTORS	31,172.12
	6140	INSPECTION FEES - UTILITIES	91,265.00
	6151	METER SETTING FEES	33,465.00
	6423	SALE OF SCRAP MATERIAL	13,446.11
	6461	INVENTORY WITHDRAWALS	4,652.44
	6434	UNMETERED WATER	82,866.05
	6723	PENALTIES ON SPECIAL ASSESSMENTS	6,042.78
			<u>\$ 690,332.15</u>

CREDIT: UNDERUTILIZATION OF PENALTY CREDIT FROM PREVIOUS YEAR	<u>\$ 63,769.00</u>
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INTEGRATED SYSTEM CREDITS

536-1000-5910			
	6152	INTEGRATED WATER CONNECTION*	569,709.36
			<u>\$ 569,709.36</u>

OFFSETTING CREDIT TO CUSTOMER ACCOUNTING ACTIVITY EXPENSES:

536-1000-5910			
	6991	BILLABLE EXPENSE - SEWAGE DISPOSAL SYSTEM	<u>\$ 2,379,792.00</u>

*\* Reflects adjustment for anticipated revenue loss from new integrated connection fee methodology. See Task 9 and 15a for explanation.*

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: November 2, 2018

TO: Molly J. Eastman  
Fiscal Services Manager

FROM: Dave Harran  
Water System Manager

**SUBJECT: 2018 WATER RATE STUDY – TASK #8**

Due to recent changes in Michigan’s Lead and Copper Rule by the Department of Environmental Quality (DEQ), additional requirements now exist that require increased testing and reporting requirements. These changes necessitate the addition of a Chemist I position to the Water System budget as a cost adjustment to the test period as part of the revenue requirement.

<u>ACCOUNT</u>	<u>DESCRIPTION</u>	<u>AMOUNT</u>
5910-536-6510-XXXX	Chemist I Salary, Taxes, and Benefits (1 FTE)	\$89,479

DH

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: August 30, 2018

TO: Molly J. Eastman  
Fiscal Services Manager

FROM: Dave Harran  
Water System Manager

**SUBJECT: 2018 WATER RATE STUDY – TASK #9**

In July 2017, the Utility Advisory Board (“UAB”) approved the adoption of the new methodology for connection to the water and sewer systems, implemented in April 2018. The projected impact of this methodology change for the calendar year 2019 is a reduction in water operating revenues of approximately \$198,646.14.

DH

# MEMORANDUM

CITY OF GRAND RAPIDS

**DATE:** October 17, 2018

**TO:** Molly J. Eastman  
Fiscal Services Manager

**FROM:** Wayne Jernberg, P.E.  
Assistant Water System Manager

**SUBJECT: 2018 WATER RATE STUDY- TASK #10**

The following are water system projects that should be considered operative as of January 1, 2019.

<u>Description</u>	<u>Location</u>	<u>Proj. Code</u>	<u>Cost</u>
ESCSO Contract No. 28B	Grand Rapids	591118082 591518082	\$1,757,932
Grandville Ave SW, Franklin to Bartlett	Grand Rapids	591117029	1,200,000
Adams Pressure District – Dickinson St	Grand Rapids	591516058	1,195,000
Rumsey St SW to Oakland and Sheridan	Grand Rapids	591118068	1,075,000
Bowne St NE from Coit and Montrose	Grand Rapids	591519045 591118050	900,000
Booster D Electrical Improvements	Grand Rapids	591215187	525,000
Newberry St, Monroe to Division	Grand Rapids	591117069	475,000
Covell Pump Station Improvements	Grand Rapids	591417049	385,000
Wealthy St, Commerce to Division	Grand Rapids	591417024	300,000
Oxford Place Apartments Phase 3	Grand Rapids	Contribution	219,455
Oakland Ave (DTE Energy)	Grand Rapids	Contribution	215,061
Weston St, Sheldon to La Grave Ave	Grand Rapids	591115153	193,000
Atlas Ave, Wealthy St to Lake Dr	Grand Rapids	591117149	180,000
Ottawa Ave, Cherry to Oakes	Grand Rapids	591116170	180,000
Village at 1300 Three Mile	Grand Rapids	Contribution	148,500
Leffingwell Pump Station Decommission	Grand Rapids	591418053	130,000
Coldbrook Fire Garage Roof	Grand Rapids	591417050	110,000
South High Lift (LMFP)	Integrated	591115159 591415159	630,000
LMFP – Septic System Phase 2	Integrated	591417051	555,000
LMFP Stormwater Improvements	Integrated	TBD	340,000
Roof Rehabilitation LMFP	Integrated	591115175 591117050	335,000
Bristol Pump Station Improvements	Integrated	591417053	450,000
LMFP North Clearwell Improvements	Integrated	591418051	126,000
Roof Restoration Various Locations	Integrated	591417050	201,960

Replacement of Asphalt Shingles Dean Lake and Burton Pump Stations	Integrated	591417050	54,000
Valley Site Farms	Walker	Contribution	208,650
Leonard Street (Utility Ext)	Walker	591118077	160,000
Wing Ave and Paris Park Dr	Kentwood	591518058	1,547,500
Village East Condos	Kentwood	Contribution	20,900
Bayberry Chase Apartments	Cascade	Contribution	223,302
Cascade Trails	Cascade	Contribution	209,000
Michigan St Utility Ext	GR Township	Contribution	503,347
Dunnigan Ave	GR Township	5911118056	370,000
Provisional Living Phase 1	GR Township	Contribution	225,000
Blackhawk Site Condos	GR Township	Contribution	142,311
Michigan St Utility Ext	GR Township	591215186	68,614
Sessions Pointe PUD – Phase 2	Tallmadge	Contribution	328,592
Sessions Pointe PUD – Phase 2	Tallmadge	591116055	44,608
		Total	<u>\$15,932,732</u>

CITY OF GRAND RAPIDS, MICHIGAN  
WATER SUPPLY SYSTEM FUND  
TASK NO. 11

COMPUTE ACCUMULATED COST, DEPRECIATION AND DEPRECIATION EXPENSE AS OF JUNE 30, 2018

INTEGRATED SYSTEM

	ORIGINAL COST	ACCUMULATED DEPRECIATION	DEPRECIATION EXPENSE
LAND & EASEMENTS	\$ 2,507,974	\$ -	\$ -
LAND IMPROVEMENTS	2,427,654	1,603,373	75,279
BUILDINGS & STRUCTURES	47,806,632	25,733,454	933,397
STORAGE	8,275,450	6,328,810	210,826
PROCESS EQUIPMENT	61,313,257	40,518,987	1,798,498
AUXILIARY EQUIPMENT	21,293,637	14,435,173	657,453
METERS	7,375,481	7,375,481	-
MACHINERY & EQUIPMENT	3,202,181	2,981,477	32,971
OFFICE EQUIPMENT & FURNITURE	622,184	622,184	-
WATERMAINS	55,592,968	20,850,821	710,116
	<u>\$ 210,417,418</u>	<u>\$ 120,449,760</u>	<u>\$ 4,418,540</u>

NON-INTEGRATED SYSTEM

	ORIGINAL COST	ACCUMULATED DEPRECIATION	DEPRECIATION EXPENSE
LAND & EASEMENTS	\$ 2,600,444	\$ -	\$ -
LAND IMPROVEMENTS	1,204,988	1,025,832	40,656
BUILDINGS & STRUCTURES	13,699,904	4,517,822	307,494
STORAGE	12,706,874	6,473,122	288,447
PROCESS EQUIPMENT	6,735,373	3,495,105	189,203
AUXILIARY EQUIPMENT	5,438,160	4,597,668	466,777
MACHINERY & EQUIPMENT	2,144,375	2,118,973	8,611
OFFICE EQUIPMENT & FURNITURE	533,805	520,938	9,137
WATERMAINS - GRAND RAPIDS	165,517,499	37,897,505	2,112,265
WATERMAINS - WALKER	27,065,558	7,949,633	357,709
WATERMAINS - KENTWOOD	29,840,815	8,885,548	396,601
WATERMAINS - CASCADE TWP	23,452,580	6,589,125	308,914
WATERMAINS - GRAND RAPIDS TWP	18,749,665	4,990,776	243,820
WATERMAINS - TALLMADGE TWP	2,441,790	452,713	32,554
	<u>\$ 312,131,830</u>	<u>\$ 89,514,760</u>	<u>\$ 4,762,188</u>
TOTAL	<u>\$ 522,549,248</u>	<u>\$ 209,964,520</u>	<u>\$ 9,180,728</u>

SOURCE: GENERAL LEDGER, AS ADJUSTED, FOR JUNE 30, 2018.

**CITY OF GRAND RAPIDS, MICHIGAN  
 WATER RATE STUDY  
 WATER SUPPLY SYSTEM FUND  
 TASK NO. 12**

TASK 12A DETERMINE WORKING CAPITAL NEEDS FOR MATERIALS AND SUPPLIES ON HAND.

MATERIALS AND SUPPLIES INVENTORY AS OF JUNE 30, 2018: \$ 1,621,089

TASK 12B DETERMINE WORKING CAPITAL NEEDS FOR PREPAYMENT OF OPERATING COSTS.

NO REQUIREMENT FOR PREPAYMENT OF OPERATING COSTS IS CALLED FOR IN THE ORDINARY CYCLE OF BUSINESS.

TASK 12C DETERMINE CASH WORKING CAPITAL NEEDS & DETERMINE TOTAL WORKING CAPITAL NEEDS.

MINIMUM CASH WORKING CAPITAL IS DEFINED AS THE SUM OF 90 DAYS ADJUSTED OPERATING EXPENSES.

ADJUSTED CURRENT ANNUAL EXPENSES = \$ 24,681,475 @ 90/365 = \$ 6,085,843

TOTAL WORKING CAPITAL NEEDS CONSIST OF THE FOLLOWING:

	12A INVESTMENT IN INVENTORY	\$ 1,621,089
	12B PREPAYMENT OF OPERATING EXPENSES	-
	12C 90 DAY OPERATING EXPENSES	<u>6,085,843</u>
		<u><u>\$ 7,706,932</u></u>

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: August 30, 2018

TO: Molly J. Eastman  
Fiscal Services Manager

FROM: Wayne Jernberg, P.E.  
Assistant Water System Manager

**SUBJECT: 2018 WATER RATE STUDY TASK #13  
ZONEGATING & JOINT USE ALLOCATION METHODS**

Lengths and costs of all zoned primary and intermediate transmission mains as well as jointly used storage tanks and pumping stations are allocated to customer communities based on the 2016 Comprehensive Master Plan update performed by Fishbeck, Thompson, Carr, and Huber, Inc. and adjusted annually for the changes in billed flow for each customer community.

WJ

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: September 4, 2018

TO: Molly Eastman  
Utility Financial Officer

FROM: Wayne Jernberg, P.E.  
Assistant Water System Manager

**SUBJECT: 2018 WATER RATE STUDY- TASK #14**

There have been no changes in 2018 to the Zoning maps for the water system.

All zoning work papers and maps are on file at the Water Administration Building located at 1900 Oak Industrial Dr. NE, Grand Rapids, MI 49505.

WJ

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
TASK NO. 15**

COMPUTE CONSTRUCTION COST RATE BASE (NET BOOK VALUE OF ASSETS, PLUS WORKING CAPITAL, LESS CONTRIBUTIONS BY OTHERS).

ORIGINAL CONSTRUCTION COST	- TASK #10	\$ 15,932,732	
	- TASK #11	522,549,248	
		<hr/>	\$ 538,481,979
LESS: ACCUMULATED DEPRECIATION	- TASK #11	\$ 209,964,520	
		<hr/>	(209,964,520)
			<hr/>
			328,517,459
WORKING CAPITAL REQUIREMENT	- TASK #12	\$ 7,706,932	
		<hr/>	7,706,932
			<hr/>
			336,224,391
CONTRIBUTIONS BY OTHERS	- TASK #21	\$ 99,069,214	
LESS: AMORTIZATION		(34,109,470)	
		<hr/>	(64,959,744)
CONSTRUCTION COST RATE BASE			<hr/> <hr/>
			\$ 271,264,647

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 10, 2018

TO: Molly J. Eastman  
Fiscal Services Manager

FROM: Arden Postma, P.E.  
Hydraulic Engineer

**SUBJECT: 2018 Water Rate Study Integrated Connection Fees Task #15A**

Attached is the Integrated Water and Sewer Connection Fee Schedule of rates effective January 1, 2019. Per the Fifth Amendment to the Water & Sanitary Sewer Service Agreements, adopted by City Commission on March 27, 2018 (Res. 87571), the methodology for connection to the water and sewer systems is calculated based on the cost of connection to the System and is evaluated annually as part of the Rate Study and shall be administered the same across the retail system.

The integrated connection fees effective January 1, 2019, shall be as follows:

Residential Users (three residential units or less)

Plan Review and Connection Fee (PRC Fee)			
Meter Size	2018	2019	% Change
3/4 inch	\$350	\$350	0%
1 inch	\$360	\$360	0%
1-1/2 inch	\$360	\$360	0%

All other Users (including residential of more than 3 units, commercial, industrial, governmental and religious)

Plan Review and Connection Fee (PRC Fee)			
Meter Size	2018	2019	% Change
3/4 inch	\$670	\$680	1%
1 inch	\$850	\$870	2%
1-1/2 inch	\$1,120	\$1,140	2%
2 inch	\$1,570	\$1,610	3%
3 inch	\$1,910	\$1,960	3%
4 inch	\$2,650	\$2,730	3%
6 inch	\$3,850	\$3,970	3%

Plus a Meter Capacity Fee based on the meter size (when water and sanitary sewer connections are made at the same time only one Meter Capacity Fee shall be charged) as follows:

<b>Meter Capacity Charge</b>			
<b>Meter Size</b>	<b>2018</b>	<b>2019</b>	<b>% Change</b>
3/4 inch	\$175	\$210	20%
1 inch	\$250	\$250	0%
1-1/2 inch	\$800	\$800	0%
2 inch	\$900	\$900	0%
3 inch	\$1,100	\$1,100	0%
4 inch	at cost	at cost	N/A
6 inch	at cost	at cost	N/A

Fire Protection Review Fee

<b>Fire Service Review Fee</b>			
	<b>2018</b>	<b>2019</b>	<b>% Change</b>
All Fire Service Sizes	\$680	\$695	2%

AP

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
TASK NO. 16**

INCLUDE MAJOR PROJECT COST FOR SYSTEM IMPROVEMENTS (NON-INTEGRATED)

THE ESTIMATED TOTAL PROJECT COST FOR RECOMMENDED WATER SYSTEM IMPROVEMENTS  
ARE SUMMARIZED IN THE FOLLOWING TABLE.

ITEM NO.	DESCRIPTION	ESTIMATED COST	BUDGET YEAR
1	NORTHRIDGE WATERMAIN LOOPING	600,000	2018
2	METER SYSTEM UPGRADES	2,500,000	2019
3	LEAD SERVICE LINE REPLACEMENTS	1,000,000	2019
4	ESCO #28B	2,643,000	2019
5	CAMBRIDGE TANK IMPROVEMENTS	500,000	2019
6	ADAMS/ALGER PRESSURE DISTRICT MODIFICATIONS	3,600,000	2019
7	MAYNARD WATERMAIN PHASE 2/3	1,200,000	2019
8	ALGER WM REPLACEMENT	1,300,000	2019
9	DIVISION AVE WM REPLACEMENT	1,448,000	2019
10	BERKSHIRE WM REPL.	1,000,000	2020
11	LEAD SERVICE LINE REPLACEMENTS	1,000,000	2020
12	SOUTH WALKER WATERMAIN PHASE 3	2,000,000	2020
13	EMERALD WM REPLACEMENT	711,000	2020
14	TREMONT WM REPLACEMENT	1,056,000	2020
15	GRIGSS WM REPLACEMENT	822,000	2020
16	BOOSTER D IMPROVEMENTS	500,000	2020
17	WILSON PS IMPROVEMENTS	1,300,000	2020
18	COLDBROOK PUMP STATION DECOMMISSION PROJECTS	15,300,000	2020
19	VALLEY WM REPLACEMENTS	1,600,000	2020
20	CASCADE NORTH RIVER CROSSING	4,200,000	2020
21	COVELL RESERVOIR IMPROVEMENTS	1,000,000	2020
22	FULTON WM REPLACEMENT	1,210,000	2021
23	LAKE EASTBROOK WM REPLACEMENT	700,000	2021
24	LEAD SERVICE LINE REPLACEMENTS	1,000,000	2021
25	ROSEWOOD WM REPLACEMENT	759,000	2021
26	BOOSTER A PUMP STATION IMPROVEMENTS	500,000	2021
27	WILSON RESERVOIR IMPROVEMENTS	500,000	2021
28	OMENA WM REPLACEMENT	500,000	2021
29	KNAPP TANK IMPROVEMENTS	500,000	2021
30	LEAD SERVICE LINE REPLACEMENTS	1,000,000	2022
31	COLLEGE WM REPLACEMENT	792,000	2022
32	OAK PARK WM REPLACEMENT	519,000	2022
33	BUTTERWORTH LP DISTRICT IMPROVEMENTS	1,374,000	2022
34	GARFIELD WM REPLACEMENTS	775,000	2022
35	LAKESIDE WM REPLACEMENT	780,000	2022
36	NORTHEAST ELEVATED STORAGE TANK	3,500,000	2022
37	STEVENS WM REPLACEMENT	1,000,000	2023
38	OKEMOS WM REPLACEMENT	525,000	2023
39	LEONARD TANK IMPROVEMENTS	500,000	2023
40	EMERALD WM IMPROVEMENTS	783,000	2023
41	KENT RIDGE WM REPLACEMENT	600,000	2023
42	LANGLEY WM REPLACEMENT	600,000	2023
43	FRONT WM REPLACEMENT	1,400,000	2023
44	FRANKLIN WM REPLACEMENT	775,500	2023
45	GIDDINGS WM REPLACEMENT	798,000	2023
46	JEFFERSON WM REPLACEMENT	540,000	2023
47	LAFAYETTE WM REPLACEMENT	531,000	2023
48	LEAD SERVICE LINE REPLACEMENTS	1,000,000	2023
		<u>\$ 68,741,500</u>	

NOTE: NONE OF THE PROJECTS ABOVE ARE INCLUDED IN RECOMMENDED REVENUE REQUIREMENTS FOR CALENDAR YEAR 2019. COSTS SHOWN ARE IN 2018 DOLLARS AND ARE TAKEN FROM THE FISCAL YEARS 2019-2023 CAPITAL PROJECT PLAN.

SOURCE: WAYNE JERNBERG, ASSISTANT WATER SYSTEM MANAGER, SEPTEMBER 2018

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
TASK NO. 17**

**BONDS - PRINCIPAL & INTEREST PAYMENTS (SENIOR)**

FISCAL YEAR ENDING JUNE 30,	PRINCIPAL	INTEREST	PRIN & INT
2019	\$ 5,490,000	\$ 3,859,986	\$ 9,349,986
2020	6,085,000	4,813,719	10,898,719
2021	2,780,000	4,523,219	7,303,219
2022	2,910,000	4,399,019	7,309,019
2023	3,060,000	4,258,331	7,318,331
2024	3,225,000	4,110,081	7,335,081
2025	3,385,000	3,953,700	7,338,700
2026	3,565,000	3,789,400	7,354,400
2027	3,745,000	3,615,950	7,360,950
2028	3,945,000	3,433,800	7,378,800
2029	3,850,000	3,239,350	7,089,350
2030	4,040,000	3,046,850	7,086,850
2031	4,240,000	2,844,850	7,084,850
2032	4,450,000	2,641,800	7,091,800
2033	4,660,000	2,428,600	7,088,600
2034	4,880,000	2,205,250	7,085,250
2035	5,130,000	1,961,250	7,091,250
2036	3,130,000	1,704,750	4,834,750
2037	3,285,000	1,548,250	4,833,250
2038	3,455,000	1,384,000	4,839,000
2039	3,625,000	1,211,250	4,836,250
2040	2,050,000	1,030,000	3,080,000
2041	2,155,000	927,500	3,082,500
2042	2,265,000	819,750	3,084,750
2043	2,375,000	706,500	3,081,500
2044	2,495,000	587,750	3,082,750
2045	2,620,000	463,000	3,083,000
2046	2,755,000	332,000	3,087,000
2047	1,895,000	194,250	2,089,250
2048	1,990,000	99,500	2,089,500
	<u>\$ 103,535,000</u>	<u>\$ 70,133,655</u>	<u>\$ 173,668,655</u>

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
TASK NO. 18**

DETERMINE WATER SYSTEM EQUITY IN THE CONSTRUCTION COST RATE BASE BY  
SUBTRACTING DEBT OUTSTANDING FROM THE TOTAL RATE BASE.

CONSTRUCTION COST RATE BASE - TASK NO. 15	\$ 271,264,647
LESS: BONDED INDEBTEDNESS in CCRB (CASH BASIS) - TASK NO. 20	(93,950,447)
NET WATER SYSTEM EQUITY	<u><u>\$ 177,314,200</u></u>

**CITY OF GRAND RAPIDS, MICHIGAN  
 WATER RATE STUDY  
 WATER SUPPLY SYSTEM FUND  
 RATE OF RETURN ON EQUITY - TASK NO. 19**

AT THE APRIL 5, 1977, COMMITTEE OF THE WHOLE MEETING, THE CITY COMMISSION DECIDED THE LEVEL OF RETURN ON WATER SYSTEM EQUITY. THE LEVEL DECIDED UPON WAS ONE PERCENT MORE THAN THE AVERAGE BOND BUYER'S INDEX OF MUNICIPAL BONDS FOR THE PREVIOUS TWELVE MONTH PERIOD.

BOND BUYER'S INDEX OF 20 MUNICIPAL BONDS

<u>DATE</u>	<u>RATE</u>	<u>DATE</u>	<u>RATE</u>
28-Sep-17	3.641%	29-Mar-18	3.892%
05-Oct-17	3.631%	05-Apr-18	3.902%
12-Oct-17	3.611%	12-Apr-18	3.852%
19-Oct-17	3.531%	19-Apr-18	3.872%
26-Oct-17	3.651%	26-Apr-18	3.970%
02-Nov-17	3.672%	03-May-18	3.886%
09-Nov-17	3.492%	10-May-18	3.876%
16-Nov-17	3.516%	17-May-18	3.946%
23-Nov-17	3.512%	24-May-18	3.896%
30-Nov-17	3.590%	31-May-18	3.780%
07-Dec-17	3.292%	07-Jun-18	3.880%
14-Dec-17	3.412%	14-Jun-18	3.916%
21-Dec-17	3.562%	21-Jun-18	3.866%
28-Dec-17	3.442%	28-Jun-18	3.866%
04-Jan-18	3.442%	05-Jul-18	3.856%
11-Jan-18	3.542%	12-Jul-18	3.846%
18-Jan-18	3.522%	19-Jul-18	3.826%
25-Jan-18	3.592%	26-Jul-18	3.900%
01-Feb-18	3.722%	02-Aug-18	3.950%
08-Feb-18	3.732%	09-Aug-18	3.976%
15-Feb-18	3.842%	16-Aug-18	3.950%
22-Feb-18	3.862%	23-Aug-18	3.936%
01-Mar-18	3.850%	30-Aug-18	3.960%
08-Mar-18	3.882%	06-Sep-18	3.975%
15-Mar-18	3.892%	13-Sep-18	4.055%
22-Mar-18	3.902%	20-Sep-18	4.145%
		<u>52 WEEKS</u>	<u>3.772%</u>

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
TASK NO. 20**

DETERMINE COMPOSITE RATE OF RETURN ON A CONSTRUCTION COST RATE BASE

	RATE BASE	RATE OF RETURN	RETURN ON INVESTMENT
WATER SYSTEM EQUITY IN THE CONSTRUCTION COST RATE BASE (CCRB)	\$ 177,314,200	@ 4.772%	= \$ 8,461,434
WATER SYSTEM INDEBTEDNESS IN THE CCRB			
2009 BONDS	715,000	@ 4.98%	= 35,607
2011 DWRFB BONDS	1,236,301	@ 2.50%	= 30,908
2011 DWRFB BONDS	2,186,024	@ 2.50%	= 54,651
2012 DWRFB BONDS	2,730,930	@ 2.50%	= 68,273
2012 DWRFB BONDS	533,514	@ 2.00%	= 10,670
2013 BONDS	2,030,000	@ 2.76%	= 56,028
2014 DWRFB BONDS	2,545,000	@ 2.50%	= 63,625
2014 QECB BONDS	1,230,610	@ 2.54%	= 31,257
2015 BONDS (refunded 2009 Bonds)	25,370,000	@ 5.00%	= 1,268,500
2015 DWRFB BONDS	8,306,838	@ 2.50%	= 207,671
2016 DWRFB BONDS (amount in CCRB)	2,668,008	@ 2.50%	= 66,700
2016 BONDS (refunded 2009)	36,740,000	@ 4.99%	= 1,831,748
2018 BONDS (refunded 1993 & amt in CCRB)	7,658,222	@ 4.94%	= 378,132
LESS INTEREST ON BOND RESERVE ACCOUNTS			(95,361)
	\$ 271,264,647		\$ 12,469,843
COMPOSITE RATE OF RETURN ON INVESTMENT		$\frac{\$ 12,469,843}{\$271,264,647} =$	4.597%

**Noted Disclosure:**

TOTAL BONDED INDEBTEDNESS IN CCRB (from above)	\$ 93,950,447	TASK NO. 18
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CITY OF GRAND RAPIDS, MICHIGAN  
 WATER SUPPLY SYSTEM FUND  
 CONSTRUCTION COST RATE BASE & RETURN ON INVESTMENT- TASK NO. 21- PART 1  
 FISCAL YEAR ENDED JUNE 30, 2018

PHYSICAL LOCATION

DESCRIPTION	RETAIL						WHOLESALE				TOTAL
	CITY OF GR	CITY OF WALKER	CITY OF KENTWOOD	CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADGE TOWNSHIP	CITY OF EAST GR	COUNTY OF OTTAWA	ADA TOWNSHIP		
COST	\$ 213,109,378	\$ 191,277,233	\$ 28,031,292	\$ 37,976,985	\$ 23,881,443	\$ 2,814,990	\$ -	\$ -	\$ -	\$ 515,641,988	
LESS: ACCUMULATED DEPRECIATION	120,449,760	53,554,462	8,250,574	10,461,964	6,587,978	452,713	-	-	-	204,297,884	
NET BOOK VALUE	\$ 92,659,618	\$ 137,722,771	\$ 19,780,718	\$ 27,515,021	\$ 17,293,465	\$ 2,362,277	\$ -	\$ -	\$ -	\$ 311,344,104	
WORKING CAPITAL REQUIREMENT	3,273,519	2,847,711	416,406	438,601	355,444	22,427	21,734	-	46,858	7,706,932	
CONTRIBUTIONS	\$ 95,933,137	\$ 140,570,482	\$ 20,197,124	\$ 27,953,622	\$ 17,648,909	\$ 2,384,704	\$ 21,734	\$ -	\$ 46,858	\$ 319,051,036	
LESS AMORTIZATION	562,048	23,912,212	20,728,375	17,595,653	20,198,926	2,441,790	-	-	-	99,011,245	
	(45,315)	(12,224,496)	(6,272,233)	(5,622,698)	(5,637,207)	(458,661)	-	-	-	(34,051,876)	
CONSTRUCTION COST RATE BASE	\$ (516,733)	\$ (11,687,716)	\$ (14,456,142)	\$ (11,972,955)	\$ (14,561,719)	\$ (1,983,129)	\$ -	\$ -	\$ -	\$ (64,959,369)	
	\$ 95,416,403	\$ 128,882,766	\$ 5,740,982	\$ 15,980,667	\$ 3,087,190	\$ 401,575	\$ 21,734	\$ -	\$ 46,858	\$ 254,091,667	
RETURN ON INVESTMENT- TASK 4/5	15,327									\$ 15,327	
RETURN ON INVESTMENT- TASK 20	\$ 4,386,292	\$ 5,909,414	\$ 263,913	\$ 734,631	\$ 141,918	\$ 18,460	\$ 999	\$ -	\$ 2,154	\$ 11,665,266	
	4.597%										

ZONEGATED

COST	\$ -	\$ (5,885,174)	\$ 598,413	\$ 2,081,414	\$ 13,297,799	\$ 234,530	\$ 1,660,725	\$ -	\$ 4,920,149	\$ 22,739,695
LESS: ACCUMULATED DEPRECIATION	-	(3,916,016)	458,989	1,222,739	3,834,376	119,996	537,296	-	1,588,920	5,666,636
NET BOOK VALUE	\$ -	\$ (1,969,158)	\$ 139,424	\$ 858,675	\$ 9,463,423	\$ 114,534	\$ 1,123,429	\$ -	\$ 3,331,229	\$ 17,073,059
WORKING CAPITAL REQUIREMENT	-	-	-	-	-	-	-	-	-	-
CONTRIBUTIONS	\$ -	\$ (1,969,158)	\$ 139,424	\$ 858,675	\$ 9,463,423	\$ 114,534	\$ 1,123,429	\$ -	\$ 3,331,229	\$ 17,073,059
LESS AMORTIZATION	-	-	-	7,133	3,538	-	9	-	22,031	57,969
	-	-	-	(7,087)	(3,516)	-	(9)	-	(21,888)	(57,594)
CONSTRUCTION COST RATE BASE	\$ -	\$ -	\$ -	\$ (46)	\$ (22)	\$ -	\$ -	\$ -	\$ (143)	\$ (375)
	\$ -	\$ (1,969,158)	\$ 139,424	\$ 858,629	\$ 9,463,401	\$ 114,534	\$ 1,123,429	\$ -	\$ 3,331,086	\$ 17,072,684
RETURN ON INVESTMENT- TASK 19/20	\$ -	\$ (162,889)	\$ 11,533	\$ 71,026	\$ 782,813	\$ 9,474	\$ 92,930	\$ -	\$ 275,547	\$ 1,412,252
RETURN ON INVESTMENT- TASK 19/20	8.272%	8.272%	8.272%	8.272%	8.272%	8.272%	8.272%		8.272%	
TOTAL RETURN ON INVESTMENT	\$ 4,386,292	\$ 5,746,525	\$ 275,446	\$ 805,657	\$ 924,731	\$ 27,934	\$ 93,929	\$ -	\$ 277,701	\$ 13,077,518



CITY OF GRAND RAPIDS, MICHIGAN  
 WATER SUPPLY SYSTEM FUND  
 CONTRIBUTIONS & AMORTIZED CONTRIBUTIONS- TASK NO. 21- PART 3  
 FISCAL YEAR ENDED JUNE 30, 2018

CONTRIBUTIONS BY OTHERS

COST CENTER	AMOUNT	RETAIL					WHOLESALE					TOTAL
		CITY OF GR	CITY OF WALKER	CITY OF KENTWOOD	CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADGE TOWNSHIP	CITY OF EAST GR	COUNTY OF OTTAWA	ADA TOWNSHIP		
2017 RATE STUDY- LOCATION		\$ 22,555,255	\$ 19,602,796	\$ 17,497,971	\$ 19,181,977	\$ 13,065,413	\$ 2,441,790	\$ -	\$ -	\$ -	\$ 94,753,570	
ADDITIONS:												
FRONT FOOT FEES		170,920	107,614	1,500	91,189	-	-	-	-	-	371,223	
FIXED ASSET CONTRIBUTIONS		1,186,037	1,017,965	96,182	925,760	506,828	-	-	-	-	3,886,452	
OTHER CONTRIBUTIONS		-	-	-	-	-	-	-	-	-	-	
		562,048	20,728,375	17,595,653	20,198,926	13,572,241	2,441,790	-	-	-	99,011,245	
PUMPING STATIONS:												
LEFFINGWELL	\$ 115,303			7,133	3,538	25,258	-	-	22,031	-	57,969	
ADJUSTED BY ZONEGATING												
LESS: ZONEGATING ADJUSTMENT												
PHYSICAL LOCATION		562,048	20,728,375	17,602,786	20,202,464	13,597,499	2,441,790	-	22,031	-	99,069,214	
		-	-	7,133	3,538	25,258	-	-	22,031	-	57,969	
		562,048	20,728,375	17,595,653	20,198,926	13,572,241	2,441,790	-	-	-	99,011,245	
AMORTIZED CONTRIBUTIONS												
2017 RATE STUDY- LOCATION		\$ 11,463,462	\$ 5,991,988	\$ 5,385,607	\$ 5,366,604	\$ 3,608,285	\$ 426,103	\$ -	\$ -	\$ -	\$ 32,279,870	
CURRENT YEAR ADJUSTMENTS		7,494	280,245	237,091	270,603	182,981	32,558	-	-	-	1,325,077	
PRIOR PERIOD ADJUSTMENT		446,929									446,929	
		45,315	6,272,233	5,622,698	5,637,207	3,791,266	458,661	-	-	-	34,051,876	
PUMPING STATIONS:												
LEFFINGWELL	114,557			7,087	3,516	25,094	-	-	21,888	-	57,994	
ADJUSTED BY ZONEGATING												
LESS: ZONEGATING ADJUSTMENT												
PHYSICAL LOCATION		45,315	6,272,233	5,629,785	5,640,723	3,816,360	458,661	-	21,888	-	34,109,470	
		-	-	7,087	3,516	25,094	-	-	21,888	-	57,994	
		45,315	6,272,233	5,622,698	5,637,207	3,791,266	458,661	-	-	-	34,051,876	

CITY OF GRAND RAPIDS, MICHIGAN  
 WATER SUPPLY SYSTEM FUND  
 RECONCILIATION OF CONSTRUCTION COST & ACCUMULATED DEPRECIATION- PHYSICAL LOCATION & ZONEGATING  
 FISCAL YEAR ENDED JUNE 30, 2018

COST CENTER COST BY PHYSICAL LOCATION-TASK 11 IN SERVICE-TASK 10	AMOUNT	RETAIL					WHOLESALE					TOTAL
		CITY OF GR	CITY OF WALKER	CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADGE TOWNSHIP	CITY OF EAST GR	COUNTY OF OTTAWA	ADA TOWNSHIP	TOTAL		
		\$ 210,581,422	\$ 27,065,538	\$ 23,452,530	\$ 18,749,665	\$ 2,441,730	\$ -	\$ -	\$ -			
2,691,960	3,686,650	1,568,400	432,302	1,309,272	373,200	-	-	-	-	-	\$ 522,549,248	
BRISTOL	(612,700)	612,700	-	-	-	-	-	-	-	-	-	-
EAST PARIS	(6,379,717)	6,379,717	-	-	-	-	-	-	-	-	-	-
BURTON	(219,892)	219,892	-	-	-	-	-	-	-	-	-	-
PATTERSON TANK	(3,938,991)	3,938,991	-	-	-	-	-	-	-	-	-	-
WATERMANS												
LESS: WATERMANS-TOTAL SUBS-HOME COMM	(29,556,719)	(725,425)	(10,825,800)	(6,200)	(2,208,247)	-	-	-	-	-	-	(43,322,391)
ADD: WATERMANS-TOTAL ADDS-HOME COMM	12,214,882	469,917	7,074,863	2,761	699,917	-	-	-	-	-	-	20,482,400
TOTAL-PHYSICAL LOCATION COST	\$ 213,109,378	\$ 191,277,233	\$ 28,031,292	\$ 23,881,443	\$ 18,550,667	\$ 2,814,990	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 515,641,988
CONSTRUCTION COST- ZONEGATING												
PUMPING STATIONS:												
KNAPP SERVICE CENTER	\$ 3,379,233	\$ (2,049,730)	\$ 154,428	\$ 66,735	\$ 1,066,417	\$ -	\$ 77	\$ -	\$ 763,075	\$ -	\$ -	\$ -
LIVINGSTON	2,090,217	(892,112)	76,185	31,597	457,516	-	134	-	326,680	-	-	-
FRANKLIN	8,541,087	(5,015,230)	2,635,676	1,444,466	89,451	-	842,357	-	3,280	-	-	-
LEFFINGWELL	141,009	(70,894)	8,724	4,327	30,889	-	12	-	26,942	-	-	-
BRISTOL	612,700	-	-	-	-	-	-	-	-	-	-	-
EAST PARIS	6,379,717	555,900	(4,347,270)	3,542,272	165,528	-	-	-	83,970	-	-	-
BURTON	219,892	(214,325)	112,637	61,729	3,822	-	35,998	-	139	-	-	-
COLDBROOK PS PUMP 2	389,279	(147,093)	145,544	-	-	1,549	-	-	-	-	-	-
STORAGE TANKS:												
ELKS	236,335	(118,570)	5,418	2,307	37,418	-	3	-	26,775	-	-	-
KNAPP	116,070	(21,159)	18,585	706	1,700	-	167	-	1	-	-	-
CAMBRIDGE	3,938,991	446,929	(2,957,458)	1,996,713	221,050	-	-	-	292,766	-	-	-
PATTERSON	508,158	1,594,861	452,869	6,147,947	3,758,048	232,981	781,977	-	3,396,521	-	-	-
WATERMANS-ZONEGATED COST												
TOTAL-ZONEGATED COST	\$ -	\$ (5,885,174)	\$ 598,413	\$ 2,081,414	\$ 13,297,799	\$ 5,831,639	\$ 1,660,725	\$ -	\$ 4,920,149	\$ -	\$ -	\$ 22,739,695
GRAND TOTAL- COST	\$ 213,109,378	\$ 185,392,059	\$ 28,629,705	\$ 37,179,242	\$ 24,382,506	\$ 3,049,520	\$ 1,660,725	\$ -	\$ 4,920,149	\$ -	\$ -	\$ 538,381,683
ACCUMULATED DEPRECIATION-BY PHYSICAL LOCATION												
ACC DEPREC BY PHYSICAL LOCATION- TASK 11	\$ 120,449,760	\$ 60,646,965	\$ 7,949,633	\$ 8,885,548	\$ 6,689,125	\$ 452,713	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 209,964,620
BRISTOL	(333,259)	333,259	-	-	-	-	-	-	-	-	-	-
EAST PARIS	(2,126,508)	2,126,508	-	-	-	-	-	-	-	-	-	-
BURTON	(87,127)	87,127	-	-	-	-	-	-	-	-	-	-
PATTERSON	(508,158)	508,158	-	-	-	-	-	-	-	-	-	-
WATERMANS												
LESS: WATERMANS-TOTAL SUBS-HOME COMM	(6,457,399)	(425,165)	(2,630,467)	(2,067)	(663,482)	-	-	-	-	-	-	(10,178,580)
ADD: WATERMANS-TOTAL ADDS-HOME COMM	2,418,610	305,720	1,572,217	920	213,139	-	-	-	-	-	-	4,510,606
TOTAL-PHYSICAL LOCATION ACC DEP	\$ 120,449,760	\$ 53,553,124	\$ 8,250,574	\$ 10,461,964	\$ 6,587,978	\$ 452,713	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 204,296,546
ACCUMULATED DEPRECIATION-ZONEGATING												
PUMPING STATIONS:												
KNAPP SERVICE CENTER	\$ 2,361,691	\$ (1,432,523)	\$ 107,926	\$ 45,941	\$ 745,302	\$ -	\$ 54	\$ -	\$ 533,300	\$ -	\$ -	\$ -
LIVINGSTON	1,054,741	(480,166)	38,443	15,944	230,867	-	67	-	164,845	-	-	-
FRANKLIN	3,804,461	(2,233,937)	1,174,011	643,409	39,844	-	375,212	-	1,461	-	-	-
LEFFINGWELL	140,101	(70,437)	8,667	4,299	30,690	-	12	-	26,769	-	-	-
BRISTOL	333,259	-	-	-	-	-	-	-	-	-	-	-
EAST PARIS	2,126,508	185,161	(1,449,046)	1,180,722	55,174	-	-	-	27,989	-	-	-
BURTON	87,127	(35,721)	18,773	10,288	637	-	6,000	-	23	-	-	-
COLDBROOK PS PUMP 2	64,880	(147,093)	145,544	-	-	1,549	-	-	-	-	-	-
STORAGE TANKS:												
ELKS	236,335	(116,070)	5,304	2,258	36,629	-	3	-	26,210	-	-	-
KNAPP	116,070	(21,159)	18,585	706	1,700	-	167	-	1	-	-	-
CAMBRIDGE	3,938,991	57,657	(381,533)	257,590	28,517	-	-	-	37,769	-	-	-
PATTERSON	508,158	302,866	1,681,609	1,673,219	650,976	118,447	155,781	-	770,553	-	-	5,666,636
WATERMANS-ZONEGATED ACC DEP												
TOTAL-ZONEGATED ACC DEP	\$ -	\$ (3,916,016)	\$ 458,989	\$ 3,834,376	\$ 1,820,336	\$ 119,996	\$ 537,296	\$ -	\$ 1,588,920	\$ -	\$ -	\$ 5,666,636
GRAND TOTAL- ACC DEP	\$ 120,449,760	\$ 49,637,108	\$ 8,709,563	\$ 10,422,354	\$ 6,360,769	\$ 572,709	\$ 537,296	\$ -	\$ 1,588,920	\$ -	\$ -	\$ 209,963,182

CITY OF GRAND RAPIDS, MICHIGAN  
 WATER SUPPLY SYSTEM FUND  
 ADJUSTED OPERATING EXPENSE ZONEGATED BY GOVERNMENTAL UNIT - TASK #22  
 FISCAL YEAR ENDED JUNE 30, 2018

COST CENTER	ADJUSTED EXPENSE BY COST CENTER	INTEGRATED SYSTEM	RETAIL					WHOLESALE					
			CITY OF GR	CITY OF WALKER	CITY OF KENTWOOD	CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADGE TOWNSHIP	CITY OF EAST GR	COUNTY OF OTTAWA	ADA TOWNSHIP		
FILTRATION PLANT	\$ 8,135,621	\$ 8,135,621											
PUMPING STATIONS:													
A. PRIMARY TRANSPORT	766,563	766,563											
B. INTERMEDIATE TRANSPORT	1,672,996		817,930	55,850	273,151	241,889	136,341				55,584		92,251
WATERMAINS:													
A. PRIMARY TRANSPORT	357,586		204,711	35,794	47,373	35,383	17,926			1,058	3,469		11,872
B. INTERMEDIATE TRANSPORT	1,823,243		672,467	385,306	311,209	264,662	135,358			30,849	-		23,392
C. LOCAL DISTRIBUTION	4,784,228		3,498,418	377,093	327,050	265,190	298,632			17,845	-		-
RETAIL CUSTOMER METERING *	3,418,606		2,550,691	278,377	233,935	159,581	184,741			11,281			-
SUBTOTAL OPERATING EXPENSE	20,958,843	8,902,184	7,744,217	1,132,420	1,192,718	966,705	772,998			61,033	59,063		127,515
ENGINEERING SERVICES	1,117,999	474,871	413,101	60,405	63,625	51,562	41,232			3,253	3,153		6,797
ADMINISTRATIVE EXPENSE	2,604,633	1,081,609	999,091	137,585	144,919	117,443	93,913			7,410	7,181		15,482
TOTAL	\$ 24,681,476	\$ 10,458,664	\$ 9,156,409	\$ 1,330,410	\$ 1,401,262	\$ 1,135,710	\$ 908,143			\$ 71,696	\$ 69,387		\$ 149,794

\* Reflects adjustment for circuit breaker provisions per the third amendment to W/S service agreements.

METHOD OF DISTRIBUTION													
FILTRATION PLANTS		100.00%											
PUMPING STATIONS			100.00%										
A. PRIMARY TRANSPORT		100.00%											
B. INTERMEDIATE TRANSPORT		100.00%	48.891%	3.338%	16.327%	14.458%	8.150%				3.322%		5.514%
MEMO													
WATERMAINS													
TOTAL MILES:	1,185.09												
A. PRIMARY TRANSPORT		100.000%	57.248%	10.010%	13.248%	9.895%	5.013%			0.296%	0.970%		3.320%
MILES	60.84		34.83	6.09	8.06	6.02	3.05			0.18	0.59		2.02
B. INTERMEDIATE TRANSPORT		100.000%	36.883%	21.133%	17.069%	14.516%	7.424%			1.692%	-		1.283%
MILES	310.22		114.42	65.56	52.95	45.03	23.03			5.25	-		3.98
C. LOCAL DISTRIBUTION		100.000%	73.124%	7.882%	6.836%	5.543%	6.242%			0.373%	-		-
MILES	814.03		595.25	64.16	55.65	45.12	50.81			3.04	-		-
RETAIL CUSTOMER METERING (1)		100.000%	74.612%	8.143%	6.843%	4.668%	5.404%			0.330%	-		-
NUMBER OF METERS	79,675.00		59,447.00	6,488.00	5,452.00	3,719.00	4,306.00			263.00	-		-
ENGINEERING SERVICES (2)		100.000%	36.950%	5.403%	5.691%	4.612%	3.688%			0.291%	0.282%		0.608%
ADMINISTRATIVE EXPENSE (3)		100.000%	38.358%	5.282%	5.564%	4.509%	3.606%			0.284%	0.276%		0.594%

NOTES:  
 (1) ALLOCATION BASED ON NUMBER OF METERS.  
 (2) ALLOCATION BASED ON DIRECT OPERATING EXPENSE.  
 (3) ALLOCATION BASED ON DIRECT OPERATING EXPENSE, ADJUSTED FOR ANY COST ASSIGNABLE EXCLUSIVELY TO GR OR RETAIL COMMUNITIES, IF APPLICABLE.

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
TASK NO. 23**

ASSIGN OTHER OPERATING REVENUES AND UNDERUTILIZED PENALTY CREDIT FROM PREVIOUS YEAR TO EACH GOVERNMENTAL ENTITY - TASK NO. 7

BASIS OF ALLOCATION: RETAIL BILLINGS BY GOVERNMENTAL ENTITY - TASK NO. 6

	<u>RETAIL BILLINGS</u>	<u>PERCENTAGE OF TOTAL</u>	<u>ALLOCATION</u>
CITY OF GRAND RAPIDS	\$ 24,928,063	64.6077%	\$ 487,207
CITY OF WALKER	3,269,323	8.4733%	63,897
CITY OF KENTWOOD	4,401,186	11.4068%	86,019
CASCADE TOWNSHIP	3,534,349	9.1602%	69,077
GRAND RAPIDS TOWNSHIP	2,244,495	5.8172%	43,868
TALLMADGE TOWNSHIP	206,329	0.5348%	4,033
	<u>\$ 38,583,745</u>	<u>100.0000%</u>	<u>\$ 754,101</u>



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CITY OF GRAND RAPIDS, MICHIGAN  
 WATER SUPPLY SYSTEM FUND  
 ACCUMULATE REVENUE REQUIREMENTS BY CUSTOMER COMMUNITIES- TASK NO. 25  
 FISCAL YEAR ENDED JUNE 30, 2018

COST CENTER	INTEGRATED SYSTEM	RETAIL						WHOLESALE			TOTAL
		CITY OF GR	CITY OF WALKER	CITY OF KENTWOOD	CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADGE TOWNSHIP	CITY OF EAST GR	COUNTY OF OTTAWA	ADA TOWNSHIP	
OPERATION & MAINTENANCE EXPENSE- TASK NO. 22	\$ 10,458,664	\$ 9,156,409	\$ 1,330,410	\$ 1,401,262	\$ 1,135,710	\$ 908,143	\$ 71,696	\$ 69,387	\$ -	\$ 149,794	\$ 24,681,476
DEPRECIATION EXPENSE TASK NO. 24	4,547,877	2,273,507	113,594	274,445	321,474	162,265	8,078	41,988	-	84,290	7,827,518
RETURN ON SYSTEM INVESTMENT TASK NO. 21	4,386,292	5,746,525	275,446	805,657	924,731	539,303	27,934	93,929	-	277,701	13,077,518
REVENUE CREDITS- TASK NO. 23	-	(487,207)	(63,897)	(86,019)	(69,077)	(43,868)	(4,033)	-	-	-	(754,101)
ALLOCATE:											
INTEG COMM. FEE CREDIT (A)	-	(308,957)	(61,007)	(68,805)	(48,486)	(31,271)	(3,497)	(20,988)	-	(26,698)	(569,709)
INTEGRATED SYSTEM (A)	(19,392,833)	9,470,226	1,869,990	2,109,020	1,486,192	958,535	107,187	643,331	1,930,008	818,344	-
LESS: CIRCUIT BREAKER (B)			(110,445)	(94,100)	(34,239)	(155,453)	-				(394,237)
	\$ -	\$ 25,850,503	\$ 3,354,091	\$ 4,341,460	\$ 3,716,305	\$ 2,337,654	\$ 207,365	\$ 827,647	\$ 1,930,008	\$ 1,303,431	\$ 43,868,464

(A) ALLOCATED ON THE BASIS OF RELATIVE BILLED VOLUME & LAND AREA TO UAB PARTNERS. OTTAWA'S ALLOCATION IS BASED ON OLD CONTRACT AND EXCLUDES ANY COST OF COLDBROOK PUMPING.

(B) PURSUANT TO CITY AND CUSTOMER COMMUNITY CIRCUIT BREAKER, AS PROVIDED FOR BY THE THIRD AMENDMENT TO THE UNIFORM SERVICE AGREEMENTS.

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
TASK NO. 25A**

REVIEW THE REVENUE REQUIREMENTS TO ASSURE COMPLIANCE WITH THE APPLICABLE BOND ORDINANCE PROVISIONS.

	<u>YEAR ENDED 6/30/18</u>	<u>PRO FORMA * 6/30/19</u>
<b>REVENUES:</b>		
RETAIL/WHOLESALE WATER SALES	\$ 42,549,260	\$ 42,686,522
CONNECTION FEES/FRONT FOOT FEES	1,139,578	698,001
BILLABLE TO SDS FUND	2,379,792	2,510,424
OTHER OPERATING REVENUES	1,840,445	1,813,700
INTEREST ON INVESTMENTS	636,536	386,286
MISCELLANEOUS	786,099	740,000
TOTAL REVENUES	<u>\$ 49,331,711</u>	<u>\$ 48,834,933</u>
<b>OPERATING EXPENSES:</b>		
OPERATIONS & MAINTENANCE	\$ 26,713,153	\$ 29,466,215
DEPRECIATION	9,295,560	9,295,560
TOTAL EXPENSES	<u>\$ 36,008,713</u>	<u>\$ 38,761,775</u>
ADDITIONS: DEPRECIATION	<u>9,295,560</u>	<u>9,295,560</u>
NET EARNINGS OF THE SYSTEM	<u>\$ 22,618,558</u>	<u>\$ 19,368,718</u>
<b>DEBT SERVICE</b>		
SERIES 2018 BONDS	\$ -	\$ 3,904,767
SERIES 2016 BONDS	1,812,450	2,077,450
SERIES 2015 BONDS	1,268,500	2,253,500
SERIES 2013 BONDS	203,369	210,469
SERIES 2010 BONDS	7,276,500	-
SERIES 2009 BONDS	28,600	743,600
SERIES 1993 BONDS	3,759,000	160,200
SENIOR LIEN	14,348,419	9,349,986
JUNIOR LIEN **	1,582,777	1,886,657
TOTAL	<u>15,931,196</u>	<u>11,236,643</u>
COVERAGE RATIO - SENIOR DEBT	<u>1.58</u>	<u>2.07</u>
COVERAGE RATIO - ALL DEBT	<u>1.42</u>	<u>1.72</u>

\* WATER SALES ADJUSTED FOR RATE REVISIONS OF 2.45% AND 2.71% EFFECTIVE 1/1/18 AND 1/1/19, RESPECTIVELY; OTHER REVENUES AND OPERATIONS & MAINTENANCE EXPENSE PER 2018 FISCAL PLAN, ADJUSTED FOR CARRYFORWARDS.

\*\* AMOUNTS IN PRO FORMA ARE BASED ON MAXIMUM PRINCIPAL AND DO NOT INCLUDE PRINCIPAL FORGIVENESS IF NOT YET FINALIZED.

**SUMMARY**

**WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
RATE ANALYSIS - TASK NO. 26**

INITIAL SYSTEM REVENUE REQUIREMENTS		\$ 44,262,701
REVENUES FROM CURRENT RATES		
MONTHLY METER CHARGE	\$ 10,179,881	
MONTHLY BILLING CHARGE	3,566,917	
COMMODITY CHARGE	28,161,302	
MONTHLY FIRE PROTECTION	764,580	
ANNUAL HYDRANT CHARGE	<u>39,192</u>	<u>(42,711,873)</u>
INITIAL REQUIRED REVENUE INCREASE (DECREASE)		<u>\$ 1,550,828.00</u>
INITIAL PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES		<u>3.63%</u>
INITIAL SYSTEM REVENUE REQUIREMENTS FROM ABOVE		\$ 44,262,701
LESS: AMOUNT OF CIRCUIT BREAKER RELIEF TO REDUCE RR's TO RETAIL		(394,237)
SYSTEM REVENUE REQUIREMENTS		<u>\$ 43,868,464</u>
ACTUAL REQUIRED AMOUNT OF REVENUE INCREASE (DECREASE)		<u>\$ 1,156,591</u>
ACTUAL PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES		<u>2.71%</u>

WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
TASK NO. 26

METER SIZE	EQUIV. FACTOR	CITY OF GR		CITY OF WALKER		CITY OF KENTWOOD		CASCADE TWP		GR TWP		TALLMADGE TWP	
		METERS	EQUIV.	METERS	EQUIV.	METERS	EQUIV.	METERS	EQUIV.	METERS	EQUIV.	METERS	EQUIV.
A 3/4" or less	1.0000	53,414	53,414	5,350	5,350	3,626	3,626	2,680	2,680	3,678	3,678	202	202
B 1"	1.7778	2,484	4,416	466	828	653	1,161	368	654	313	556	21	37
C 1 1/4"	2.7778	-	-	-	-	-	-	-	-	-	-	-	-
D 1 1/2"	4.0000	1,183	4,732	219	876	414	1,656	261	1,044	137	548	14	56
E 2"	7.1111	814	5,788	99	704	185	1,316	93	661	40	284	1	7
F 3"	16.0000	109	1,744	12	192	22	352	9	144	11	176	-	-
G 4"	28.4444	80	2,276	7	199	11	313	3	85	3	85	1	28
H 6" and over	64.0000	16	1,024	3	192	3	192	-	-	1	64	-	-
		58,100	73,394	6,156	8,341	4,914	8,616	3,414	5,268	4,183	5,391	239	330
<b>FIRE PROTECTION SERVICE</b>													
H 6"		1,030		230		303		168		101		19	
I 8"		283		77		202		111		21		3	
J 10"		15		6		10		2		-		-	
K 12"		19		19		23		24		1		2	
		1,347		332		538		305		123		24	
TOTAL		59,447		6,488		5,452		3,719		4,306		263	
TOTAL													79,675

Source: City of Grand Rapids, Michigan, Water/Sewer Customer Accounts/Meters Report, dated November 1, 2018.

**CITY OF GRAND RAPIDS, MICHIGAN**

**WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
RATE ANALYSIS - TASK NO. 26**

SYSTEM REVENUE REQUIREMENTS \$ 25,850,503

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE

73,394 meter equivalents x \$ 6.30 x 12 = \$ 5,548,586

MONTHLY BILLING CHARGE

58,100 meters x \$ 3.86 x 12 = 2,691,192

COMMODITY CHARGE

8,352,751 units (100 CF) x \$ 2.00 = 16,705,502

MONTHLY FIRE PROTECTION

357,194

ANNUAL HYDRANT CHARGE

-

(25,302,474)

REQUIRED REVENUE INCREASE (DECREASE)

\$ 548,029

PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES

2.17%

**CITY OF GRAND RAPIDS, MICHIGAN**

**WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
RATE ANALYSIS - TASK NO. 27**

COMMODITY CHARGE:

$$\frac{\text{COMMODITY CHARGE @ 64\%}}{\text{BILLED UNITS}} = \frac{\$16,544,322}{8,352,751} = \underline{\underline{\$ 1.98 /100 CF *}}$$

MONTHLY SERVICE CHARGE:

SYSTEM REVENUE REQUIREMENTS	\$ 25,850,503
NEW COMMODITY CHARGE 8,352,751 x \$ 1.98	\$ 16,538,447
NEW MONTHLY BILLING CHARGE 58,100 x \$ 3.70 x 12	2,579,640
MONTHLY FIRE PROTECTION CHARGE	357,194
ANNUAL HYDRANT CHARGE	-
	<u>(19,475,281)</u>
	<u><u>\$ 6,375,222</u></u>

$$\text{MONTHLY METER CHARGE} = \frac{\$6,375,222}{73,394 \times 12} = \underline{\underline{\$ 7.24 \text{ MONTHLY}}}$$

<u>METER SIZE</u>	<u>EQUIVALENT</u>	<u>MONTHLY SERVICE CHARGE</u>			<u>PRESENT</u>
		<u>METER</u>	<u>BILLING</u>	<u>TOTAL</u>	
3/4" or less	1.0000	\$ 7.24	\$ 3.70	\$ 10.94	\$ 10.16
1"	1.7778	12.87	3.70	16.57	15.06
1 1/4"	2.7778	20.11	3.70	23.81	21.36
1 1/2"	4.0000	28.96	3.70	32.66	29.06
2"	7.1111	51.48	3.70	55.18	48.66
3"	16.0000	115.84	3.70	119.54	104.66
4"	28.4444	205.94	3.70	209.64	183.06
6" and over	64.0000	463.36	3.70	467.06	407.06

\* NEW RATES EFFECTIVE, ON A PRO-RATA BASIS, JANUARY 1, 2019

**CITY OF WALKER, MICHIGAN**

**WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
RATE ANALYSIS - TASK NO. 26**

SYSTEM REVENUE REQUIREMENTS*									\$ 3,354,091
REVENUES FROM CURRENT RATES									
MONTHLY METER CHARGE									
8,341 meter equivalents	x	\$ 8.87	x	12 =	\$	887,816			
MONTHLY BILLING CHARGE									
6,156 meters	x	\$ 3.86	x	12 =		285,146			
COMMODITY CHARGE									
1,197,683 units (100 CF)	x	\$ 1.64	=			1,964,200			
MONTHLY FIRE PROTECTION						99,440			
ANNUAL HYDRANT CHARGE						-		(3,236,602)	
REQUIRED REVENUE INCREASE (DECREASE)								\$ 117,489	
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES								3.63%	

\* REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 110,445



**CITY OF KENTWOOD, MICHIGAN**

**WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
RATE ANALYSIS - TASK NO. 26**

SYSTEM REVENUE REQUIREMENTS \$ 4,341,460

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE					
8,616 meter equivalents	x	\$ 10.70	x	12 =	\$ 1,106,294
MONTHLY BILLING CHARGE					
4,914 meters	x	\$ 3.86	x	12 =	227,616
COMMODITY CHARGE					
1,767,323 units (100 CF)	x	\$ 1.52	=		2,686,331
MONTHLY FIRE PROTECTION					169,144
ANNUAL HYDRANT CHARGE				-	<u>(4,189,385)</u>
REQUIRED REVENUE INCREASE (DECREASE)					<u>\$ 152,075</u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES					<u>3.63%</u>

\* REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 94,100



**CASCADE TOWNSHIP**  
**WATER RATE STUDY**  
**WATER SUPPLY SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 26**

SYSTEM REVENUE REQUIREMENTS\* \$ 3,716,305

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE			
5,268 meter equivalents	x	\$ 18.44	x 12 = \$ 1,165,703
MONTHLY BILLING CHARGE			
3,414 meters	x	\$ 3.86	x 12 = 158,136
COMMODITY CHARGE			
927,590 units (100 CF)	x	\$ 2.33	= 2,161,285
MONTHLY FIRE PROTECTION			101,005
ANNUAL HYDRANT CHARGE			-
			<u>(3,586,129)</u>
REQUIRED REVENUE INCREASE (DECREASE)			<u>\$ 130,176</u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES			<u>3.63%</u>

\* REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 34,239



**GRAND RAPIDS TOWNSHIP**  
**WATER RATE STUDY**  
**WATER SUPPLY SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 26**

SYSTEM REVENUE REQUIREMENTS\* \$ 2,337,654

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE					
5,391 meter equivalents	x	\$ 12.16	x	12 =	\$ 786,655
MONTHLY BILLING CHARGE					
4,183 meters	x	\$ 3.86	x	12 =	193,757
COMMODITY CHARGE					
672,734 units (100 CF)	x	\$ 1.85	=		1,244,558
MONTHLY FIRE PROTECTION					30,799
ANNUAL HYDRANT CHARGE				-	<u>(2,255,769)</u>
REQUIRED REVENUE INCREASE (DECREASE)					<u>\$ 81,885</u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES					<u>3.63%</u>

\* REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 155,453



**TALLMADGE TOWNSHIP**

**WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
RATE ANALYSIS - TASK NO. 26**

SYSTEM REVENUE REQUIREMENTS \$ 207,365

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE

330 meter equivalents x \$ 2.33 x 12 = \$ 9,227

MONTHLY BILLING CHARGE

239 meters x \$ 3.86 x 12 = 11,070

COMMODITY CHARGE

41,322 units (100 CF) x \$ 3.33 = 137,602

MONTHLY FIRE PROTECTION

6,998

ANNUAL HYDRANT CHARGE

39,192

(204,089)

REQUIRED REVENUE INCREASE (DECREASE)

\$ 3,276

PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES

1.61%



**CITY OF EAST GRAND RAPIDS, MICHIGAN**

**WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
RATE ANALYSIS - TASK NO. 26**

INTEGRATED SYSTEM REVENUE REQUIREMENTS *				\$	622,343
COMMODITY CHARGE					
(100CF)	559,585	units	x	\$	1.07
					598,756
					<hr/>
REQUIRED COMMODITY REVENUE INCREASE (DECREASE)				\$	<u>23,587</u>
NON-INTEGRATED SYSTEM REVENUE REQUIREMENTS				\$	205,304
MONTHLY SERVICE CHARGE					
	\$14,728		x		12 MONTHS
					176,736
					<hr/>
REQUIRED SERVICE REVENUE INCREASE (DECREASE)				\$	<u>28,568</u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES					<u>6.73%</u>

\* NET OF INTEGRATED CONNECTION FEE CREDIT.

**CITY OF EAST GRAND RAPIDS, MICHIGAN**

**WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
RATE ANALYSIS - TASK NO. 27**

SYSTEM REVENUE REQUIREMENTS	\$ 827,647
NEW COMMODITY CHARGE *	
559,585 x \$1.11 =	(621,139)
	<hr/>
	<u>\$ 206,508</u>

MONTHLY SERVICE CHARGE \* = \$206,508 / 12 = \$17,209

\* NEW RATES EFFECTIVE ON JANUARY 1, 2019

**ADA TOWNSHIP**

**WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
RATE ANALYSIS - TASK NO. 26**

INTEGRATED SYSTEM REVENUE REQUIREMENTS *		\$	791,646
COMMODITY CHARGE			
(100CF) 631,763 units	x	\$ 1.22	770,751
			<hr/>
REQUIRED COMMODITY REVENUE INCREASE (DECREASE)		\$	<u>20,895</u>
NON-INTEGRATED SYSTEM REVENUE REQUIREMENTS		\$	511,785
MONTHLY SERVICE CHARGE			
\$41,158	x	12 MONTHS	493,896
			<hr/>
REQUIRED SERVICE REVENUE INCREASE (DECREASE)		\$	<u>17,889</u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES			<u>3.07%</u>

\* NET OF INTEGRATED CONNECTION FEE CREDIT.

**ADA TOWNSHIP**  
**WATER RATE STUDY**  
**WATER SUPPLY SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 27**

SYSTEM REVENUE REQUIREMENTS	\$ 1,303,431
NEW COMMODITY CHARGE *	
631,763 x         \$1.25 =	(789,704)
	<hr/>
	<u>\$ 513,727</u>

MONTHLY SERVICE CHARGE \* = \$513,727 / 12 = \$42,811

\* NEW RATES EFFECTIVE ON JANUARY 1, 2019

**OTTAWA COUNTY**  
**WATER RATE STUDY**  
**WATER SUPPLY SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 26**

INTEGRATED SYSTEM REVENUE REQUIREMENTS	\$ 1,930,008
COMMODITY CHARGE	
(100CF) 1,617,365 units   x     \$ 1.17	1,892,317
	<hr/>
REQUIRED COMMODITY REVENUE INCREASE (DECREASE)	<u>\$ 37,691</u>
NON-INTEGRATED SYSTEM REVENUE REQUIREMENTS	\$ -
MONTHLY SERVICE CHARGE	
\$414                   x     12 MONTHS	4,968
	<hr/>
REQUIRED SERVICE REVENUE INCREASE (DECREASE)	<u>\$ (4,968)</u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES	<u>1.72%</u>

**OTTAWA COUNTY**  
**WATER RATE STUDY**  
**WATER SUPPLY SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 27**

SYSTEM REVENUE REQUIREMENTS	\$ 1,930,008
NEW COMMODITY CHARGE *	
1,617,365 x      \$1.19 =	(1,924,664)
	<hr/>
	<u>\$ 5,344</u>

MONTHLY SERVICE CHARGE \* = \$ 5,344 / 12 = \$445

\* NEW RATES EFFECTIVE ON JANUARY 1, 2019

WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
RE-EVALUATE FRONT FOOT CHARGES  
TASK NO. 28

The City Engineer's Office has reviewed recent construction costs for water facilities and recommends the following front foot assessment rates:

Water User Type	Definition	2018 Rate	2019 Rate	% Change
Domestic	Property is domicile for single or multiple family use, such as homes, apartments, duplexes, condominium, etc.	\$ 89.00	\$ 100.00	12.36%
Commercial - Industrial	Property used to offer services and / or products, such as retail/wholesale stores, gas stations, restaurants, hotels, schools, churches, etc., and manufacturing or processing facilities (industrial).	\$ 147.00	\$ 140.00	-4.76%

The above rates are based on an average of prices quoted in bid proposals which have been received by the City Engineer's Office during the period July 1, 2017 through June 30, 2018. Calculations of the rates are on file in the City Engineer's Office.

WATER RATE STUDY  
 WATER SUPPLY SYSTEM FUND  
 EVALUATE WATER SERVICE CHARGES  
 TASK NO. 29

The City Engineer's Office has evaluated the cost for water services and recommends the following water service charges:

Service Size	Year	50' R.O.W.	60' R.O.W.	66' R.O.W.	80' R.O.W.	100' R.O.W.
1" Water Service	2018	\$ 2,650	\$ 3,050	\$ 3,300	\$ 3,800	\$ 4,600
	2019	\$ 2,800	\$ 3,300	\$ 3,500	\$ 4,000	\$ 5,000
1-1/2" Water Service	2018	\$ 3,700	\$ 4,100	\$ 4,400	\$ 5,000	\$ 5,900
	2019	\$ 3,800	\$ 4,300	\$ 4,600	\$ 5,200	\$ 6,100
2" Water Service	2018	\$ 3,800	\$ 4,300	\$ 4,500	\$ 5,200	\$ 6,000
	2018	\$ 4,300	\$ 4,400	\$ 5,200	\$ 5,800	\$ 6,900

The percent increases of the water service pipe charges are as shown below:

Service Size	50' R.O.W.	60' R.O.W.	66' R.O.W.	80' R.O.W.	100' R.O.W.
1" Water Service	5.66%	8.20%	6.06%	5.26%	8.70%
1-1/2" Water Service	2.70%	4.88%	4.55%	4.00%	3.39%
2" Water Service	13.16%	2.33%	15.56%	11.54%	15.00%

**CITY OF GRAND RAPIDS, MICHIGAN**  
**WATER RATE STUDY**  
**WATER SUPPLY SYSTEM FUND**  
**FEES, CHARGES, AND PENALTIES**  
**TASK NO. 30**

Fees, Charges, and Penalties	2018 Fee (\$)	2019 Fee (\$)	% Change
<b>Fire Protection Monthly (based on pipe size)</b>			
<b>6"</b>	\$18.04	\$18.94	5%
<b>8"</b>	\$32.02	\$33.62	5%
<b>10"</b>	\$50.15	\$52.66	5%
<b>12"</b>	\$72.16	\$75.77	5%

<b>Hydrant Use Per Season</b>			
Hydrant Use Permit Fee (Non-Metered Hydrant Connection - Residential Customers)	\$50	\$50	0%
Hydrant Use Permit Fee (Metered Hydrant Connection)	\$300	\$300	0%
Non-Metered Hydrant Connection Use Fee (pool filling per connection)	\$100 (RD) + \$75/week	\$100 (RD) + \$75/week	0%
Metered Hydrant Connection Use Fee * (per connection)	\$500 (RD) + \$25/week	\$500 (RD) + \$25/week	0%

**RD=Refundable Deposit**

*\*Plus metered volume (Commodity Charges at City of Grand Rapids Rate)*

<b>Tapping Permits</b>			
All sizes	\$375	\$375	0%

<b>Meter Installation and Service On/Off Requests</b>			
<i>Normal Service Hours 8am - 7pm M-F all non-emergency service requests must be scheduled</i>			
All sizes	\$50	\$50	0%
Inspection/Repair Scheduled On & Off Request (may also need meter install)	\$60	\$60	0%

<b>Meter Replacement (Non-System Planned/Scheduled Replacement)</b>			
<i>Meter Replacement Fee: Charged to customer at time of discovery of a system known meter that requires replacement outside of Water System planned replacement program scheduling as a result of infrastructure loss (Frozen/Missing/Stolen/Damaged), unnecessary replacement, and/or customer request. Customer requested meter replacement requires meter testing prior to approval.</i>			
<b>¾"</b>	\$175	\$210	20%
<b>1"</b>	\$250	\$250	0%
<b>1 ½"</b>	\$800	\$800	0%
<b>2"</b>	\$900	\$900	0%
<b>3"</b>	\$1,100	\$1,100	0%
<b>4" or larger</b>	Cost	Cost	0%

**CITY OF GRAND RAPIDS, MICHIGAN**  
**WATER RATE STUDY**  
**WATER SUPPLY SYSTEM FUND**  
**FEES, CHARGES, AND PENALTIES**  
**TASK NO. 30**

**Fees, Charges, and Penalties** **2018 Fee (\$)** **2019 Fee (\$)** **% Change**

<b>Meter Reading</b>			
Final or Actual Reading	\$45	\$45	0%
Meter Interface Unit Replacement	\$150	\$150	0%

<b>Meter Testing</b>			
<i>Meter Testing Fee: Charged and paid by customer prior to test, if test results find the meter to read in error beyond AWWA acceptance and in the benefit of the Water System, the fee will be refunded and a new meter will be set.</i>			
¾" and 1"	\$100	\$100	0%
1 ½"	\$200	\$200	0%
2"	\$300	\$300	0%
3"	\$400	\$400	0%
4"	Cost	Cost	0%
<b>Security Deposit</b>			
Minimum Deposit Amount	\$500	\$500	0%

<b>Miscellaneous</b>			
Street Opening Permit	\$50	\$100	100%
Water Inspection Permit (Within City Limits)	\$65	\$70	7.7%
Water Inspection Permit (Outside City Limits)	\$80	\$85	6.25%
Sanitary Service Line Inspection Permit (Within City Limits)	\$65	\$70	7.7%
Sanitary Service Line Inspection Permit (Outside City Limits)	\$80	\$85	6.25%
Storm Service Line Inspection Permit (Within City Limits)	\$65	\$70	7.7%
Storm Service Line Inspection Permit (Outside City Limits)	\$80	\$85	6.25%
Footing Drain Lateral Inspection Permit (Within City Limits)	\$65	\$70	7.7%
Footing Drain Lateral Inspection Permit (Outside City Limits)	\$80	\$85	6.25%
Sewer Lateral Service Demolition/Cap off Inspection Fee (Within City Limits)	\$65	\$70	7.7%
Sewer Later Service Demolition/Cap off Inspection Fee (Outside City Limits)	\$80	\$85	6.25%
Plumbing Service Re-inspection Fee	\$65	\$70	7.7%
Cross Connection Re-inspection Fee	\$75	\$75	0%

**CITY OF GRAND RAPIDS, MICHIGAN**  
**WATER RATE STUDY**  
**WATER SUPPLY SYSTEM FUND**  
**FEES, CHARGES, AND PENALTIES**  
**TASK NO. 30**

<b>Fees, Charges, and Penalties</b>	<b>2018 Fee (\$)</b>	<b>2019 Fee (\$)</b>	<b>% Change</b>
Hydrant Flow Test	\$200	\$200	0%
Irrigation Service Cut/Cap Administrative Fee	\$65	\$65	0%
Delinquent Commercial Backflow Test Fee (Per Device)	\$25	\$25	0%

<b>Services</b>			
Customer requested on-site service visit (internal plumbing, customer issue)	\$100	\$100	0%

<b>Penalties</b>			
Late Payment Penalty	10% of Net	10% of Net	0%
Return check or payment charge (City Treasurer processing fee)	\$30	\$30	0%
Administrative Fee (documentation creation, research/review of service location or account) (FOIA request may still be required)	\$55	\$55	0%
Missed Appointment	\$45	\$45	0%
Unauthorized operation, tampering, or removal of any Water or Sanitary Sewer System owned or maintained, valve, asset, infrastructure, or equipment (for example, but not limited to, valves, meters, meter reading equipment, hydrants, and curb)	\$500	\$500	0%
Unauthorized or Illegal connection to any Water or Sanitary Sewer System owned pipe, property, and/or private plumbing system served by the Water and/or Sanitary Sewer System ** & ***	\$500	\$500	0%
Failure to return or return of damaged beyond repair/ repairable hydrant connection equipment	Cost + 10%	Cost + 10%	0%
Repair/Replace damage to a fire hydrant	Cost + 10%	Cost + 10%	0%
Permit infractions/violations ** & ***	\$100	\$100	0%
Unauthorized service tap of Water or Sewer main** & ***	\$500	\$500	0%

**\*\* Plus double the commodity rate for estimated volume and any unbilled readiness to serve charges that may apply**  
**\*\*\* Penalties shall double with each subsequent infraction**

<b>Miscellaneous Damage or Loss</b>			
Any cost recovery due to damage caused or undue oversight of any location, account, or infrastructure of the Water and/or Sanitary Sewer System will be charged in accordance with cost recovery methodology for time and materials, including a 10% administrative charge for processing	Cost + 10%	Cost +10%	0%

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
TASK NO. 31**

*THERE IS NO TASK 31 FOR THE WATER RATE STUDY.*

# MEMORANDUM

CITY OF GRAND RAPIDS

**DATE:** August 30, 2018

**TO:** Molly Eastman  
Utility Financial Officer

**FROM:** Arden Postma, P.E. *AP*  
Hydraulic Engineer

**SUBJECT:** 2018 WATER RATE STUDY- TASK #32, WATER MAIN OVERSIZING RATES

Water main oversizing rates are established for this year as noted below:

<u>Pipe Size</u>	<u>2016 Rate</u>	<u>2017 Rate</u>	<u>2018 Rate</u>	<u>'17 - '18 % Change</u>
8"-12"	\$18.85/ft	\$24.51/ft	\$26.40/ft	7.7%
12"-16"	\$23.59/ft	\$26.79/ft	\$32.24/ft	20.3%
8"-16"	\$42.44/ft	\$51.30/ft	\$58.64/ft	14.3%

These rates have been determined in accordance with the Water System Rules and Regulations, and are approved for use from January 1, 2019 through December 31, 2019. Background information and calculations to establish these rates are on file in the Utility Engineering, Distribution and Collection Office.

These costs will be reviewed and may be adjusted again next year. If you have any questions regarding this matter, please call me at 456-4201.

AP  
Cc: David Harran  
Wayne Jernberg  
Rick DeVries  
Jeff McCaul

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
TASK NO. 33**

SERVICE AREA MAPS AND SERVICE AREA LAND MASS SUMMARIES

The following summarizes Utility Services Districts (USD) land mass square miles for UAB partner communities, per information on file as of August 31, 2018 :

UAB Partners	Sq. Miles of USD by CC	Percent
Grand Rapids	45.36	35.046%
Walker	25.48	19.686%
Kentwood	13.50	10.430%
Cascade	21.14	16.333%
Grand Rapids Township	10.91	8.429%
Tallmadge Township	2.46	1.901%
East Grand Rapids	3.37	2.604%
Ada	7.21	5.571%
Total	129.43	100.000%

**CITY OF GRAND RAPIDS, MICHIGAN  
WATER RATE STUDY  
WATER SUPPLY SYSTEM FUND  
TASK NO. 34**

INDIVIDUAL CIRCUIT BREAKER AND CITY & CUSTOMER COMMUNITY CIRCUIT BREAKER

The Third Amendment to the Water and Sanitary Sewer Agreements stipulates penalty fees shall be used to fund the circuit breaker provisions noted above.

The following summarizes those values:

<u>Description</u>	<u>AMOUNT</u>	<u>PERCENT</u>
Individual Circuit Breaker (ICB)*	\$ 142,161	24.63%
City & Customer Community Circuit Breaker (CCCCB)	435,128	75.37%
Total	<u>\$ 577,289</u>	<u>100.00%</u>

The following tables summarize the amount, if any, of the Circuit Breaker to be applied as a revenue credit in next year's Rate Study:

<u>Description</u>	<u>AMOUNT</u>	<u>PERCENT</u>
City & Customer Community Circuit Breaker Amount- Above	\$ 435,128	100.00%
Less: Amount Applied in Current Rate Study	(394,237)	-90.60%
Total CCCCCB Revenue Credit- Next Year's Rate Study	<u>\$ 40,891</u>	<u>9.40%</u>

\*Per City Commission Resolution 84923 adopted on September 8, 2015, the Water and Sanitary Sewer Systems are authorized to utilize non-operating revenue to provide supplemental funding to the ICB. \$142,161 includes \$80,000 of facility rental revenue from fiscal year 2018 to supplement the 2019 ICB.

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
ANNUAL RATE REVIEW**

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**CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
SYSTEM ADDITIONS AND IMPROVEMENTS  
FOR THE YEAR ENDED JUNE 30, 2018  
TASKS NO. 1, 2, & 3**

COMMUNITY	LOCAL		TRUNK		INTERCEPTOR		TOTALS	
	FEET	MILES	FEET	MILES	FEET	MILES	FEET	MILES
Grand Rapids								
Construction	3,893	0.74	10,307	1.95	0	0.00	14,200	2.69
Abandonment	(1,500)	(0.28)	(1,061)	(0.20)	0	0.00	(2,561)	(0.48)
CSO Construction	0	0.00	0	0.00	0	0.00	0	0.00
CSO Abandonment	0	0.00	0	0.00	0	0.00	0	0.00
	<u>2,393</u>	<u>0.46</u>	<u>9,246</u>	<u>1.75</u>	<u>0</u>	<u>0.00</u>	<u>11,639</u>	<u>2.21</u>
Kentwood								
Construction	774	0.15	0	0.00	0	0.00	774	0.15
Abandonment	0	0.00	0	0.00	0	0.00	0	0.00
	<u>774</u>	<u>0.15</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>774</u>	<u>0.15</u>
Cascade Twp.								
Construction	2,358	0.45	949	0.18	0	0.00	3,307	0.63
Abandonment	0	0.00	0	0.00	0	0.00	0	0.00
	<u>2,358</u>	<u>0.45</u>	<u>949</u>	<u>0.18</u>	<u>0</u>	<u>0.00</u>	<u>3,307</u>	<u>0.63</u>
G.R. Twp.								
Construction	4,602	0.87	0	0.00	0	0.00	4,602	0.87
Abandonment	(565)	(0.11)	0	0.00	0	0.00	(565)	(0.11)
	<u>4,037</u>	<u>0.76</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>4,037</u>	<u>0.76</u>
Tallmadge Twp.								
Construction	0	0.00	0	0.00	0	0.00	0	0.00
Abandonment	0	0.00	0	0.00	0	0.00	0	0.00
	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>
Walker								
Construction	6,656	1.26	0	0.00	0	0.00	6,656	1.26
Abandonment	0	0.00	0	0.00	0	0.00	0	0.00
	<u>6,656</u>	<u>1.26</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>6,656</u>	<u>1.26</u>
Wright Twp								
Construction	0	0.00	0	0.00	0	0.00	0	0.00
Abandonment	0	0.00	0	0.00	0	0.00	0	0.00
	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>	<u>0</u>	<u>0.00</u>
<b>*TOTAL*</b>	<u><u>16,218</u></u>	<u><u>3.08</u></u>	<u><u>10,195</u></u>	<u><u>1.93</u></u>	<u><u>0</u></u>	<u><u>-</u></u>	<u><u>26,413</u></u>	<u><u>5.01</u></u>

	CONTRIBUTIONS		
	COMM	OTHER	TOTAL
Integrated	\$ 167,707	\$ -	\$ 167,707
Grand Rapids	708,646	-	708,646
Kentwood	117,539	-	117,539
Cascade Twp.	422,813	-	422,813
Grand Rapids Twp.	528,970	-	528,970
Tallmadge Twp.	-	-	-
Walker	1,094,685	-	1,094,685
Wright Twp.	-	-	-
<b>*TOTAL*</b>	<u><u>\$ 3,040,360</u></u>	<u><u>\$ -</u></u>	<u><u>\$ 3,040,360</u></u>

CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
OPERATING EXPENSE ALLOCATION BY COST CENTER - TASK #4, PART 1  
FISCAL YEAR ENDED JUNE 30, 2018

Dept./Unit/Fund	ACTIVITY	WASTEWATER TREATMENT PLANT		WASTEWATER LIFT STATIONS			SEWER LINES			BULK METERING STATIONS	CUSTOMER ACCOUNTING	INDUSTRIAL PRETREAT.	ADMIN. EXPENSE
		INTERCEPTOR	TRUNK	LOCAL COLLECTOR	INTERCEPTOR	TRUNK	LOCAL COLLECTOR	INTERCEPTOR	TRUNK				
527 (3000:70) 5900	WASTEWATER TREATMENT (LESS 527 - 3040 - 5900)	\$ 17,340,860	\$ 127,951	\$ 613,745					\$ 4,109				
527 (4000 / 4290) 5900	SEWER MAINTENANCE				287,394	638,745	4,544,907			2,379,792			
527 (2000) 5900	CUSTOMER SERVICE												
527 (3040) 5900	INDUSTRIAL PRETREATMENT										565,926		
	SUBTOTAL OPERATING EXPENSE	17,340,860	127,951	613,745	287,394	638,745	4,544,907		4,109	2,379,792	565,926	-	
527 (1000:10 / 8000) 5900	ADMINISTRATION											2,045,781	
	TOTAL	\$ 17,340,860	\$ 127,951	\$ 613,745	\$ 287,394	\$ 638,745	\$ 4,544,907		\$ 4,109	\$ 2,379,792	\$ 565,926	\$ 2,045,781	

METHOD OF DISTRIBUTION

Dept./Unit/Fund	ACTIVITY	WASTEWATER TREATMENT PLANT	WASTEWATER LIFT STATIONS	SEWER LINES	BULK METERING STATIONS	CUSTOMER ACCOUNTING	INDUSTRIAL PRETREAT.	ADMIN. EXPENSE
527 (3000:70) 5900	WASTEWATER TREATMENT	100.000%						
	A. TREATMENT PLANT	94.322%						
527 (4000 / 4290) 5900	B. LIFT & METER STATIONS NO. OF STATIONS	5.678%	(8)	(45)	(3)			
	SEWER MAINTENANCE TOTAL MILES							
	A. INTERCEPTOR MILES			5.253%				
	B. TRUNK LINES MILES			11.675%				
	C. LOCAL COLLECTOR MILES			83.072%				
527 (2000) 5900	CUSTOMER SERVICE	100.000%				100.000%		
527 (3040) 5900	INDUSTRIAL PRETREATMENT	100.000%					100.000%	
527 (1000:10 / 8000) 5900	ADMINISTRATION	100.000%						100.000%



CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
ADJUSTED OPERATING EXPENSE ALLOCATION BY COST CENTER - TASK #5, PART 1  
FISCAL YEAR ENDED JUNE 30, 2018

Dept-Unit-Fund	ACTIVITY	WASTEWATER TREATMENT PLANT			WASTEWATER LIFT STATIONS			SEWER LINES			BULK METERING STATIONS	CUSTOMER ACCOUNTING	INDUSTRIAL PRETREAT.	ADMIN. EXPENSE
		ADJUSTED EXPENSE BY ACTIVITY	WASTEWATER TREATMENT PLANT	INTERCEPTOR	TRUNK	LOCAL COLLECTOR	INTERCEPTOR	TRUNK	LOCAL COLLECTOR	INTERCEPTOR				
527 (3000:70) 5900	WASTEWATER TREATMENT (LESS 527 - 3040 - 5900)	\$ 17,857,601	\$ 16,796,149	\$ 303,116	\$ 130,100	\$ 624,057				\$ 4,179				
527 (4000 / 4290) 5900	SEWER MAINTENANCE	5,533,349												
527 (2000) 5900	CUSTOMER SERVICE *	3,222,043							290,667	646,018	4,596,664	3,222,043		
527 (3040) 5900	INDUSTRIAL PRETREATMENT	578,264										578,264		
527 (1000:10 / 8000) 5900	SUBTOTAL OPERATING EXPENSE ADMINISTRATION	27,191,256 2,128,768	16,796,149	303,116	130,100	624,057			290,667	646,018	4,596,664	3,222,043	- 2,128,768	
	TOTAL	\$ 29,320,024	\$ 16,796,149	\$ 303,116	\$ 130,100	\$ 624,057			\$ 290,667	\$ 646,018	\$ 4,596,664	\$ 3,222,043	\$ 2,128,768	

\* Reflects adjustment for circuit breaker provisions per the third amendment to W/S service agreements.

METHOD OF DISTRIBUTION

527 (3000:70) 5900	WASTEWATER TREATMENT	100.000%											
	A. TREATMENT PLANT		94.056%										
	B. LIFT & METER STATIONS		5.944%										
527 (4000 / 4290) 5900	NO. OF STATIONS	(57)		(1)	(8)	(45)							(3)
	SEWER MAINTENANCE												
	TOTAL MILES	920.07											
	A. INTERCEPTOR MILES	48.33							5.253%				
	B. TRUNK LINES MILES	107.42							11.675%				
	C. LOCAL COLLECTOR MILES	764.32							83.072%				
527 (2000) 5900	CUSTOMER SERVICE	100.000%										100.000%	
527 (3040) 5900	INDUSTRIAL PRETREATMENT	100.000%											100.000%
527 (1000:10 / 8000) 5900	ADMINISTRATION	100.000%											100.000%

CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
ADJUSTED OPERATING EXPENSE ALLOCATION BY GOVERNMENTAL UNIT - TASK #5, PART 2  
FISCAL YEAR ENDED JUNE 30, 2018

COST CENTER	ADJUSTED EXPENSE BY COST CENTER	INTEGRATED SYSTEM	RETAIL					WHOLESALE						
			CITY OF GR	CITY OF WALKER	CITY OF KENTWOOD	CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADGE TOWNSHIP	WRIGHT TOWNSHIP	CITY OF EAST GR	CALEDONIA TOWNSHIP	ADA TOWNSHIP	GAINES TOWNSHIP	
WASTEWATER TREATMENT	\$ 16,796,149	\$ 16,796,149												
LIFT STATIONS:														
A. INTERCEPTOR	303,116													
B. TRUNK	130,100		63,250				21,188	8,843						
C. LOCAL COLLECTOR	624,057		99,885				128,326	217,325	33,899		10,580		6,898	
SEWER LINES:														
A. INTERCEPTOR	290,667		167,613	41,560	73,434	8,060								
B. TRUNK	646,018		227,204	160,510	148,965	58,277		33,315	17,023	724				
C. LOCAL COLLECTOR	4,596,664		2,859,447	577,571	446,888	279,891		353,667	52,126	27,074				
BULK METERING STATIONS	4,179				2,873									244
CUSTOMER ACCOUNTING	3,222,043		2,506,298	246,422	201,732	85,255		162,488	9,924	9,924				
INDUSTRIAL PRETREATMENT	578,264					578,264								
SUBTOTAL OPERATING EXPENSE	27,191,256		17,374,413	1,189,198	873,892	580,997		775,638	112,972	48,302			6,898	244
ADMINISTRATIVE EXPENSE	2,128,768		1,323,047	90,557	66,546	44,243		59,064	8,603	3,678			510	19
TOTAL	\$ 29,320,024		\$ 18,697,460	\$ 1,279,755	\$ 940,438	\$ 625,240		\$ 834,702	\$ 121,575	\$ 51,980			\$ 7,208	\$ 263

METHOD OF DISTRIBUTION

WASTEWATER TREATMENT														
A. TREATMENT PLANT	100.0000%													
B. LIFT & METER STATIONS (1)	100.0000%													
NO. OF STATIONS	(57)	(13)	(6)	(1)	(10)	(18)	(5)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
SEWER LINES:														
TOTAL MILES:	920.07													
A. INTERCEPTOR	100.0000%	57.665%	14.298%	25.264%	2.773%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
MILES	48.33	27.87	6.91	12.21	1.34									
B. TRUNK LINES	100.0000%	35.170%	24.846%	23.059%	9.021%	5.157%	2.635%	0.112%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
MILES	107.42	37.78	26.69	24.77	9.69	5.54	2.83	0.12	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
C. LOCAL COLLECTOR	100.0000%	62.207%	12.565%	9.722%	6.089%	7.694%	1.134%	0.589%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
MILES	764.32	475.45	96.04	74.31	46.54	58.81	8.67	4.50						
CUSTOMER ACCTG (2)	100.0000%	77.786%	7.648%	6.261%	2.646%	5.043%	0.308%	0.308%	0.308%	0.308%	0.308%	0.308%	0.308%	0.308%
NO. OF METERS	75,121.00	58,435.00	5,745.00	4,703.00	1,988.00	3,788.00	231.00	231.00	231.00	231.00	231.00	231.00	231.00	231.00
INDUSTRIAL PRETREATMENT	100.0000%													
ADMINISTRATIVE EXPENSE (3)	100.0000%													
NO. OF METERS	62,150%	25,011%	4,254%	3,126%	2,078%	2,775%	0.404%	0.173%	0.004%	0.000%	0.024%	0.001%	0.001%	0.001%

NOTES:

- (1) ADJUSTED DIRECT COSTS PER SCHEDULE.
- (2) ALLOCATION BASED ON NUMBER OF METERS, INCLUSIVE OF USERS FOR WRIGHT TWP.
- (3) ALLOCATED ON DIRECT OPERATING EXPENSE, ADJUSTED FOR ANY COST ASSIGNABLE EXCLUSIVELY TO GR OR RETAIL COMMUNITIES, IF APPLICABLE.

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
ADJUSTED ACTUAL EXPENSE  
YEAR ENDED JUNE 30, 2018  
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: ADMINISTRATION

OBJ	EXPENDITURE SUB-OBJECT DESCRIPTION	OPERATING EXPENSES	ADJUSTED COST FACTORS	ADJUSTED CURRENT ANNUAL EXPENSES
7020	PERMANENT EMPLOYEES	\$ 272,197.12	\$ 6,124.44	\$ 278,321.56
7105	EMPLOYERS SOCIAL SECURITY	21,249.94	478.12	21,728.06
7110	HOSPITALIZATION INSURANCE	47,695.93	10,788.82	58,484.75
7115	RETIREE HEALTH CARE	36,932.64	705.41	37,638.05
7120	RETIREMENT FUND CONTRIBUTION	72,268.99	(3,866.39)	68,402.60
7135	UNEMPLOYMENT COMPENSATION	412.28	-	412.28
7190	ADMIN ALLOCATION	15,000.00	337.50	15,337.50
	TOTAL PERSONAL SERVICES	<u>465,756.90</u>	<u>14,567.90</u>	<u>480,324.80</u>
7520	SUPPLIES	1,659.71	-	1,659.71
8510	POSTAGE	75.28	-	75.28
	TOTAL SUPPLIES	<u>1,734.99</u>	<u>-</u>	<u>1,734.99</u>
9480	COMPUTER SERVICES	14,369.04	608.96	14,978.00
9460	ENGINEERING SERVICES	6,002.11	-	6,002.11
8010	CONTRACTUAL SERVICES	165,703.05	-	165,703.05
8011	CONTRACT EMPLOYEES - TEMP SERVICES	878.49	-	878.49
8450	GENERAL LIABILITY INSURANCE/CLAIMS	340,485.00	53,762.00	394,247.00
8400	INSURANCE PREMIUMS	175,940.00	-	175,940.00
8500	TELEPHONE	1,065.39	-	1,065.39
9000	PRINTING & PUBLISHING	5,039.07	-	5,039.07
9340	MAINTENANCE SERVICE	570.00	-	570.00
8080	PAVEMENT REPAIR	1,005.16	-	1,005.16
7175	FOOD/CLEAN/CAR ALLOW	2,709.76	-	2,709.76
9430	BUILDINGS RENTALS OR LEASE	56,971.92	-	56,971.92
9410	EQUIPMENT RENTALS OR LEASE	1,286.05	-	1,286.05
9470	VEHICLE USAGE/CAR MILAGE	5,680.90	-	5,680.90
9100	PROFESSIONAL DEVELOPMENT	5,080.94	-	5,080.94
9110	OTHER TRAVEL & TRAINING	5,380.65	-	5,380.65
9130	LOCAL BUSINESS EXPENSE	3,607.40	-	3,607.40
9150	MEMBERSHIPS	28,170.72	-	28,170.72
8240	FEES	231.03	-	231.03
8030	ADMINISTRATIVE SERVICES	49,897.95	(49,897.95)	-
9650	BAD DEBT WRITE-OFFS	177.22	-	177.22
9450	311 CALL CENTER SERVICES	780.00	-	780.00
	TOTAL OTHER SERVICES & CHARGES	<u>871,031.85</u>	<u>4,473.01</u>	<u>875,504.86</u>
9760	EQUIPMENT	6,421.16	-	6,421.16
9880	CONSTRUCTION IN PROGRESS	4,086.46	-	4,086.46
	TOTAL CAPITAL	<u>10,507.62</u>	<u>-</u>	<u>10,507.62</u>
9952	OPERATING TRANSFERS-A87 COST	627,720.00	63,946.00	691,666.00
9955	OPERATING TRANS-MISC	69,030.00	-	69,030.00
	TOTAL TRANSFERS/FEES	<u>696,750.00</u>	<u>63,946.00</u>	<u>760,696.00</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 2,045,781.36</u>	<u>\$ 82,986.91</u>	<u>\$ 2,128,768.27</u>

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
ADJUSTED ACTUAL EXPENSE  
YEAR ENDED JUNE 30, 2018  
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: SDSF - CUST.SERV'S

EXPENDITURE SUB-OBJECT		OPERATING	ADJUSTED	ADJUSTED
OBJ	DESCRIPTION	EXPENSES	COST	CURRENT
			FACTORS	ANNUAL
				EXPENSES
9951	OPERATING TRANS OUT-SUBSIDIES	\$ 2,379,792.00	\$ 842,250.99	\$ 3,222,042.99
	TOTAL TRANSFERS/FEES	2,379,792.00	842,250.99	3,222,042.99
ORGANIZATIONAL UNIT TOTAL		<u>\$ 2,379,792.00</u>	<u>\$ 842,250.99</u>	<u>\$ 3,222,042.99</u>

\* Reflects adjustment for circuit breaker provisions per the third amendment to W/S service agreements.

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
ADJUSTED ACTUAL EXPENSE  
YEAR ENDED JUNE 30, 2018  
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: WASTEWATER

OBJ	EXPENDITURE SUB-OBJECT DESCRIPTION	OPERATING EXPENSES	ADJUSTED COST FACTORS	ADJUSTED CURRENT ANNUAL EXPENSES
7020	PERMANENT EMPLOYEES	\$ 3,546,992.13	\$ 148,607.32	\$ 3,695,599.45
7025	ACT.ASSIGNMENT	7,865.12	176.97	8,042.09
7040	TEMPORARY EMPLOYEES	4,993.76	112.36	5,106.12
7050	REGULAR HOURLY RATE	5,272.95	118.64	5,391.59
7055	TIME & ONE-HALF	135,380.43	3,046.06	138,426.49
7105	EMPLOYERS SOCIAL SECURITY	264,435.49	5,949.80	270,385.29
7110	HOSPITALIZATION INSURANCE	808,542.10	182,892.22	991,434.32
7115	RETIREE HEALTH CARE	437,156.19	8,349.68	445,505.87
7120	RETIREMENT FUND CONTRIBUTION	823,969.74	(44,082.38)	779,887.36
7135	UNEMPLOYMENT COMPENSATION	5,016.91	-	5,016.91
7165	SHIFT DIFFERENTIAL	10,972.66	-	10,972.66
	TOTAL PERSONAL SERVICES	<u>6,050,597.48</u>	<u>305,170.67</u>	<u>6,355,768.15</u>
7520	SUPPLIES	1,222,368.92	-	1,222,368.92
8510	POSTAGE	4,267.74	-	4,267.74
7670	CLOTHING/CLEANING ALLOWANCE	7,236.41	-	7,236.41
7800	INVENTORY - COST OF GOODS SOLD	91,666.81	-	91,666.81
7530	PROCESS CHEMICALS	429,524.51	-	429,524.51
	TOTAL SUPPLIES	<u>1,755,064.39</u>	<u>-</u>	<u>1,755,064.39</u>
9480	COMPUTER SERVICES	303,047.70	(54,179.70)	248,868.00
8010	CONTRACTUAL SERVICES	6,908,654.25	(719,988.90)	6,188,665.35
8500	TELEPHONE	36,538.35	-	36,538.35
9010	ADVERTISING - ANY MEDIA	6,269.30	-	6,269.30
9000	PRINTING & PUBLISHING	1,358.35	-	1,358.35
9200	ELECTRICITY	2,384,461.03	(58,174.00)	2,326,287.03
9180	WATER	103,916.55	-	103,916.55
9210	NATURAL GAS	158,952.19	-	158,952.19
9340	MAINTENANCE SERVICE	73,227.97	-	73,227.97
9310	EQUIPMENT REPAIRS	29,837.49	-	29,837.49
9410	EQUIPMENT RENTALS OR LEASE	36,865.04	-	36,865.04
9470	VEHICLE USAGE/CAR MILAGE	3,885.79	-	3,885.79
9100	PROFESSIONAL DEVELOPMENT	22,801.51	-	22,801.51
9140	TUITION REIMBURSEMENT/SCHOLARSHIPS	185.63	-	185.63
9110	OTHER TRAVEL & TRAINING	55,267.75	-	55,267.75
9130	LOCAL BUSINESS EXPENSE	2,742.39	-	2,742.39
9150	MEMBERSHIPS	17,811.00	-	17,811.00
8240	FEES	20,810.00	-	20,810.00
8030	ADMINISTRATIVE SERVICES	850.80	-	850.80
9440	FLEET MANAGEMENT EQUIPMENT	211,110.48	-	211,110.48
9450	311 CALL CENTER SERVICES	1,312.00	-	1,312.00
	TOTAL OTHER SERVICES & CHARGES	<u>10,379,905.57</u>	<u>(832,342.60)</u>	<u>9,547,562.97</u>
9750	BUILDING	2,638.00	-	2,638.00
9800	FURNITURE	38,138.27	-	38,138.27
9760	EQUIPMENT	141,856.97	-	141,856.97
9840	SOFTWARE	16,571.89	-	16,571.89
	TOTAL CAPITAL	<u>199,205.13</u>	<u>-</u>	<u>199,205.13</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 18,384,772.57</u>	<u>\$ (527,171.93)</u>	<u>\$ 17,857,600.64</u>

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
ADJUSTED ACTUAL EXPENSE  
YEAR ENDED JUNE 30, 2018  
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: IND. PRETREATMENT

EXPENDITURE SUB-OBJECT		OPERATING	ADJUSTED	ADJUSTED
OBJ	DESCRIPTION	EXPENSES	COST	CURRENT
			FACTORS	ANNUAL
				EXPENSES
7020	PERMANENT EMPLOYEES	\$ 220,716.77	\$ 4,966.13	\$ 225,682.90
7025	ACT.ASSIGNMENT	210.19	4.73	214.92
7055	TIME & ONE-HALF	519.54	11.69	531.23
7105	EMPLOYERS SOCIAL SECURITY	15,978.39	359.51	16,337.90
7110	HOSPITALIZATION INSURANCE	40,972.64	9,268.01	50,240.65
7115	RETIREE HEALTH CARE	27,796.56	530.91	28,327.47
7120	RETIREMENT FUND CONTRIBUTION	52,391.67	(2,802.95)	49,588.72
7135	UNEMPLOYMENT COMPENSATION	308.70	-	308.70
	TOTAL PERSONAL SERVICES	<u>358,894.46</u>	<u>12,338.03</u>	<u>371,232.49</u>
7520	SUPPLIES	3,852.13	-	3,852.13
	TOTAL SUPPLIES	<u>3,852.13</u>	<u>-</u>	<u>3,852.13</u>
8010	CONTRACTUAL SERVICES	190,004.28	-	190,004.28
8500	TELEPHONE	(96.61)	-	(96.61)
9000	PRINTING & PUBLISHING	49.90	-	49.90
9100	PROFESSIONAL DEVELOPMENT	570.40	-	570.40
9110	OTHER TRAVEL & TRAINING	8,017.35	-	8,017.35
9130	LOCAL BUSINESS EXPENSE	1,444.00	-	1,444.00
9150	MEMBERSHIPS	500.00	-	500.00
	TOTAL OTHER SERVICES & CHARGES	<u>200,489.32</u>	<u>-</u>	<u>200,489.32</u>
9800	FURNITURE	2,548.73	-	2,548.73
9760	EQUIPMENT	140.94	-	140.94
	TOTAL CAPITAL	<u>2,689.67</u>	<u>-</u>	<u>2,689.67</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 565,925.58</u>	<u>\$ 12,338.03</u>	<u>\$ 578,263.61</u>

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
ADJUSTED ACTUAL EXPENSE  
YEAR ENDED JUNE 30, 2018  
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: REPAIR & MAINTENANCE

EXPENDITURE SUB-OBJECT		OPERATING	ADJUSTED	ADJUSTED
OBJ	DESCRIPTION	EXPENSES	COST	CURRENT
			FACTORS	ANNUAL
				EXPENSES
7020	PERMANENT EMPLOYEES	\$ 1,590,267.06	\$ 35,781.01	\$ 1,626,048.07
7025	ACT.ASSIGNMENT	3,870.33	87.08	3,957.41
7040	TEMPORARY EMPLOYEES	8,690.83	195.54	8,886.37
7055	TIME & ONE-HALF	143,451.76	3,227.66	146,679.42
7105	EMPLOYERS SOCIAL SECURITY	125,013.05	2,812.79	127,825.84
7110	HOSPITALIZATION INSURANCE	368,559.31	83,368.12	451,927.43
7115	RETIREE HEALTH CARE	197,757.46	3,777.17	201,534.63
7120	RETIREMENT FUND CONTRIBUTION	372,738.08	(19,941.49)	352,796.59
7135	UNEMPLOYMENT COMPENSATION	2,335.92	-	2,335.92
7165	SHIFT DIFFERENTIAL	363.72	-	363.72
	TOTAL PERSONAL SERVICES	<u>2,813,047.52</u>	<u>109,307.88</u>	<u>2,922,355.40</u>
7520	SUPPLIES	328,721.69	-	328,721.69
8510	POSTAGE	225.00	-	225.00
7670	CLOTHING/CLEANING ALLOWANCE	11,224.38	-	11,224.38
	TOTAL SUPPLIES	<u>340,171.07</u>	<u>-</u>	<u>340,171.07</u>
9480	COMPUTER SERVICES	97,658.04	4,138.96	101,797.00
8010	CONTRACTUAL SERVICES	1,054,133.20	-	1,054,133.20
8011	CONTRACT EMPLOYEES - TEMP SERVICES	64,591.71	-	64,591.71
8500	TELEPHONE	38,715.33	-	38,715.33
9010	ADVERTISING - ANY MEDIA	255.68	-	255.68
9200	ELECTRICITY	3,926.86	-	3,926.86
9180	WATER	4,238.40	-	4,238.40
9210	NATURAL GAS	6,972.91	-	6,972.91
9340	MAINTENANCE SERVICE	6,518.00	-	6,518.00
8040	HOME REPAIRS	51,144.00	-	51,144.00
9410	EQUIPMENT RENTALS OR LEASE	74,600.89	-	74,600.89
9400	LAND RENTAL OR LEASE	3,994.04	-	3,994.04
9470	VEHICLE USAGE/CAR MILAGE	1,080.88	-	1,080.88
9100	PROFESSIONAL DEVELOPMENT	1,733.85	-	1,733.85
9110	OTHER TRAVEL & TRAINING	2,636.33	-	2,636.33
9150	MEMBERSHIPS	3,641.76	-	3,641.76
7910	SUBSCRIPTIONS AND PUBLICATIONS	259.00	-	259.00
8240	FEES	60.00	-	60.00
9440	FLEET MANAGEMENT EQUIPMENT	858,205.66	-	858,205.66
9450	311 CALL CENTER SERVICES	8,859.00	-	8,859.00
	TOTAL OTHER SERVICES & CHARGES	<u>2,283,225.54</u>	<u>4,138.96</u>	<u>2,236,220.50</u>
9760	EQUIPMENT	34,601.60	-	34,601.60
	TOTAL CAPITAL	<u>34,601.60</u>	<u>-</u>	<u>34,601.60</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 5,471,045.73</u>	<u>\$ 113,446.84</u>	<u>\$ 5,533,348.57</u>

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
ADJUSTED ACTUAL EXPENSE  
YEAR ENDED JUNE 30, 2018  
RATE STUDY- TASKS NO. 4 & 5**

ORGANIZATIONAL SUMMARY

EXPENDITURE SUB-OBJECT		OPERATING	ADJUSTED	ADJUSTED
NO.	DESCRIPTION	EXPENSES	COST	ANNUAL
			FACTORS	CURRENT
7020	PERMANENT EMPLOYEES	\$ 5,630,173.08	\$ 195,478.90	\$ 5,825,651.98
7025	ACT.ASSIGNMENT	11,945.64	268.78	12,214.42
7040	TEMPORARY EMPLOYEES	13,684.59	307.90	13,992.49
7050	REGULAR HOURLY RATE	5,272.95	118.64	5,391.59
7055	TIME & ONE-HALF	279,351.73	6,285.41	285,637.14
7105	EMPLOYERS SOCIAL SECURITY	426,676.87	9,600.22	436,277.09
7110	HOSPITALIZATION INSURANCE	1,265,769.98	286,317.17	1,552,087.15
7115	RETIREE HEALTH CARE	699,642.85	13,363.17	713,006.02
7120	RETIREMENT FUND CONTRIBUTION	1,321,368.48	(70,693.21)	1,250,675.27
7135	UNEMPLOYMENT COMPENSATION	8,073.81	-	8,073.81
7165	SHIFT DIFFERENTIAL	11,336.38	-	11,336.38
7190	ADMIN ALLOCATION	15,000.00	337.50	15,337.50
	TOTAL PERSONAL SERVICES	<u>9,688,296.36</u>	<u>441,384.48</u>	<u>10,129,680.84</u>
7520	SUPPLIES	1,556,602.45	-	1,556,602.45
8510	POSTAGE	4,568.02	-	4,568.02
7670	CLOTHING/CLEANING ALLOWANCE	18,460.79	-	18,460.79
7800	INVENTORY - COST OF GOODS SOLD	91,666.81	-	91,666.81
7530	PROCESS CHEMICALS	429,524.51	-	429,524.51
	TOTAL SUPPLIES	<u>2,100,822.58</u>	<u>-</u>	<u>2,100,822.58</u>
9480	COMPUTER SERVICES	415,074.78	(49,431.78)	365,643.00
9460	ENGINEERING SERVICES	6,002.11	-	6,002.11
8010	CONTRACTUAL SERVICES	8,318,494.78	(719,988.90)	7,598,505.88
8011	CONTRACT EMPLOYEES - TEMP SERVICES	65,470.20	-	65,470.20
8450	GENERAL LIABILITY INSURANCE/CLAIMS	340,485.00	53,762.00	394,247.00
8400	INSURANCE PREMIUMS	175,940.00	-	175,940.00
8500	TELEPHONE	76,222.46	-	76,222.46
9010	ADVERTISING - ANY MEDIA	6,524.98	-	6,524.98
9000	PRINTING & PUBLISHING	6,447.32	-	6,447.32
9200	ELECTRICITY	2,388,387.89	(58,174.00)	2,330,213.89
9180	WATER	108,154.95	-	108,154.95
9210	NATURAL GAS	165,925.10	-	165,925.10
9340	MAINTENANCE SERVICE	80,315.97	-	80,315.97
8040	HOME REPAIRS	51,144.00	-	-
9310	EQUIPMENT REPAIRS	29,837.49	-	29,837.49
8080	PAVEMENT REPAIR	1,005.16	-	1,005.16
7175	FOOD/CLEAN/CAR ALLOW	2,709.76	-	2,709.76
9430	BUILDINGS RENTALS OR LEASE	56,971.92	-	56,971.92
9410	EQUIPMENT RENTALS OR LEASE	112,751.98	-	112,751.98
9400	LAND RENTAL OR LEASE	3,994.04	-	3,994.04
9470	VEHICLE USAGE/CAR MILAGE	10,647.57	-	10,647.57
9100	PROFESSIONAL DEVELOPMENT	30,186.70	-	30,186.70
9140	TUITION REIMBURSEMENT/SCHOLARSHIPS	185.63	-	185.63
9110	OTHER TRAVEL & TRAINING	71,302.08	-	71,302.08
9130	LOCAL BUSINESS EXPENSE	7,793.79	-	7,793.79
9150	MEMBERSHIPS	50,123.48	-	50,123.48
7910	SUBSCRIPTIONS AND PUBLICATIONS	259.00	-	259.00
8240	FEES	21,101.03	-	21,101.03
8030	ADMINISTRATIVE SERVICES	50,748.75	(49,897.95)	850.80
9650	BAD DEBT WRITE-OFFS	177.22	-	177.22
9440	FLEET MANAGEMENT EQUIPMENT	1,069,316.14	-	1,069,316.14
9450	311 CALL CENTER SERVICES	10,951.00	-	10,951.00
	TOTAL OTHER SERVICES & CHARGES	<u>13,734,652.28</u>	<u>(823,730.63)</u>	<u>12,859,777.65</u>
9750	BUILDING	2,638.00	-	2,638.00
9800	FURNITURE	40,687.00	-	40,687.00
9760	EQUIPMENT	183,020.67	-	183,020.67
9840	SOFTWARE	16,571.89	-	16,571.89
9880	CONSTRUCTION IN PROGRESS	4,086.46	-	4,086.46
	TOTAL CAPITAL	<u>247,004.02</u>	<u>-</u>	<u>247,004.02</u>
9952	OPERATING TRANSFERS-A87 COST	627,720.00	63,946.00	691,666.00
9955	OPERATING TRANS-MISC	69,030.00	-	69,030.00
9951	OPERATING TRANS OUT-SUBSIDIES	2,379,792.00	842,250.99	3,222,042.99
	TOTAL TRANSFERS/FEES	<u>3,076,542.00</u>	<u>906,196.99</u>	<u>3,982,738.99</u>
	GRAND TOTAL- EXPENDITURES	<u>\$ 28,847,317.24</u>	<u>\$ 523,850.84</u>	<u>\$ 29,320,024.08</u>

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: August 30, 2018

TO: Molly J. Eastman  
Fiscal Services Manager

FROM: Jenessa B. Carter  
Financial Analyst

**SUBJECT: 2018 SEWER RATE STUDY TASK #4  
FY18 OPERATING EXPENSES - SEWAGE PUMPING STATIONS**

The attached schedule allocates the direct cost for operating and maintaining system lifting and metering stations. The operating expense consists of direct labor, utilities, operating and maintenance supplies, repairs and maintenance, and equipment rental.

The overflow regulators are components of the integrated system and subsequently not included herein.

Attachment

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE PUMPING STATIONS OPERATING COSTS  
FOR THE YEAR ENDED JUNE 30, 2018**

<u>Station</u>	<u>Physical Location</u>	<u>Type</u>	<u>FY2018 5900 Expenses</u>
Market Avenue Pump Station	Grand Rapids	Interceptor	\$298,107.61
Millbank Lift Station	Grand Rapids	Local	\$11,288.93
Eastlake Lift Station	Grand Rapids	Local	\$10,381.63
Eastern Lift Station	Grand Rapids	Trunk	\$7,134.61
Oak Hollow Lift Station	Grand Rapids Twmsp	Local	\$7,404.27
Kingsbury Lift Station	Walker	Trunk	\$14,779.41
Bona Vista Lift Station	Grand Rapids	Trunk	\$12,924.63
Aberdeen Lift Station	Grand Rapids	Local	\$58,250.57
O'Brien Lift Station	Walker	Trunk	\$34,529.27
Leonard Heights Lift Station	Walker	Trunk	\$12,896.12
Guild Lift Station	Grand Rapids	Local	\$13,753.06
Orchard Vista Lift Station	Cascade Twmsp	Local	\$8,361.74
Brookview Lift Station	Grand Rapids	Trunk	\$16,151.59
Remembrance Road Lift Station	Walker	Local	\$73,635.60
Kraft Avenue Lift Station	Cascade Twmsp	Local	\$7,458.04
Thornapple Lift Station	Cascade Twmsp	Trunk	\$20,837.87
Thornhills Lift Station	Cascade Twmsp	Local	\$20,488.36
Greenbrier Lift Station	Grand Rapids Twmsp	Local	\$14,099.28
Shore Haven Lift Station	Grand Rapids Twmsp	Local	\$7,065.75
Ada Lift Station	Ada	Local	\$6,587.50
Robinhood Lift Station	Grand Rapids Twmsp	Local	\$10,030.57
Lincoln School Lift Station	Grand Rapids Twmsp	Local	\$4,458.54
Reeds Lake Blvd. Lift Station	Grand Rapids Twmsp	Local	\$7,220.49
6000 28th Street Lift Station	Cascade Twmsp	Local	\$8,165.94
Ada Meter Station	Ada	Meter	
East Grand Rapids Meter Station	East Grand Rapids	Meter	\$1,044.31
Rickman Avenue Lift Station	Grand Rapids	Local	\$7,598.84
Michigan Street Lift Station	Grand Rapids	Local	\$7,167.20
Eagle Crest Lift Station	Grand Rapids Twmsp	Local	\$13,292.95
East Paris Lift Station	Grand Rapids Twmsp	Local	\$34,235.03
Alpine Estates Lift Station	Walker	Local	\$11,054.01
Elmdale Lift Station	Grand Rapids	Local	\$6,080.62
Collindale Lift Station	Walker	Local	\$13,544.13
Bird Avenue Lift Station	Grand Rapids Twmsp	Local	\$23,598.16
Monroe & Howland Regulator Station	Grand Rapids	Local	\$16.40
Division & Weston Regulator Station	Grand Rapids	Trunk	
Front & Wealthy Regulator Station	Grand Rapids	Interceptor	\$481.27
Butterworth Regulator Station	Grand Rapids	Trunk	\$787.28
Valentine Lift Station	Grand Rapids Twmsp	Local	\$2,752.26
Cascade Springs Lift Station	Cascade Twmsp	Local	\$14,494.77
Churchill Downs Lift Station	Grand Rapids	Local	\$5,617.12
Woodsboro Court Lift Station	Grand Rapids Twmsp	Local	\$2,147.15
Meadowood Trails Lift Station	Cascade Twmsp	Local	\$14,141.95
Gaines Township Meter Station	Gaines Township	Meter	\$239.52
Kentwood Meter Station	Kentwood	Meter	\$2,825.17
Stonebridge Lift Station	Grand Rapids Twmsp	Local	\$15,049.11
Burton/Cacade Lift Station	Cascade Twmsp	Local	\$37,741.88
Crahen Lift Station	Grand Rapids Twmsp	Local	\$7,765.64
Jonathan Woods Lift Station	Cascade Twmsp	Local	\$6,753.33
Watermark Lift Station	Cascade Twmsp	Local	\$8,599.10
Mountain Ash Lift Station	Tallmadge Twmsp	Local	\$6,604.19
Reeds Hollow Lift Station	Grand Rapids Twmsp	Local	\$5,652.98
Celebration Village Lift Station	Grand Rapids Twmsp	Trunk	\$8,697.21
Saddleback Lift Station	Grand Rapids Twmsp	Local	\$4,521.85
Arbor Hills Lift Station	Grand Rapids Twmsp	Local	\$48,430.03
16th Avenue Lift Station	Marne	Local	\$10,405.61
Hayes West Lift Station	Wright TWP	Local	\$9,045.88
Hayes East Lift Station	Wright TWP	Local	\$4,804.65
Cypress Trails Lift Station	Grand Rapids Twmsp	Local	\$6,010.31
8th & Leonard Lift Station	Tallmadge Twmsp	Local	\$6,731.02
Summit Ridge Lift Station	Grand Rapids	Local	\$5,101.61
Lake Michigan Estates	Tallmadge Twmsp	Local	\$6,153.71
			<u><u>\$1,045,197.63</u></u>

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 1, 2018

TO: Molly Eastman  
Utility Financial Officer

FROM: Jeff Dood  
Chief Financial Officer

**SUBJECT: 2018 SEWER RATE STUDY TASK #5  
KNOWN COST ADJUSTMENTS**

Known cost adjustments by which to adjust FY18 operating costs are listed below.

Expense Object – 7060, 7020, 7040, 7055, 7025, 7045, 7050, 7030, 7035, 7190

GREIU and APA wages were increased by 2.00% in FY2019. Labor negotiations will begin shortly for the next contract which begins with FY2020. As the outcome of these negotiations are unknown at this time, a 2.00% wage increase has also been presumed for FY2020 (same as FY2019). After converting these increases from a 2018 fiscal year to a 2019 calendar year basis as well as factoring in the lump sum payments (if any), the result is a 2.25% factor for both GREIU and APA employees. A blended rate was then computed by weighting the calendar year percentages according to the percentage of Sewer Fund employees in each union (84% GREIU and 16% APA). Executive and non-reps amounted to less than 3% of the population and were therefore excluded. **The wage increase factor to translate FY2018 actual costs to estimated calendar 2019 will be 2.25% [2.25 X 84% + 2.25 X 16%].**

Expense Object – 9480/8450/9952

Adjust FY2018 actual cost to reflect adjustments in charges for central services rendered by the Information Technology Fund (data charges), the Insurance Payment Fund (property and general liability) and the General Operating Fund (A-87 cost allocation). The “Exhibit” workbook (inclusive of cost center allocations) maintained by the Budget Office has been utilized to blend FY2019 and FY2020 budget amounts thus arriving at an estimated 2019 calendar year rate as follows:

<b>9480-Data Charges</b>			
Dept.-Unit-Fund	FY2019 Request	FY2020 Forecast	Calendar 2019 Estimate
527-1000-5900	\$14,770	\$15,186	<b>\$14,978</b>
527-3000-5900	\$245,408	\$252,328	<b>\$248,868</b>
527-4010-5900	\$50,911	\$52,347	<b>\$51,629</b>
527-4290-5900	\$49,471	\$50,866	<b>\$50,168</b>
Total	\$360,560	\$370,727	\$365,643

<b>8450-General Liability Insurance</b>			
Cost Center	FY2019 Request	FY2020 Forecast	Calendar 2019 Estimate
527-1000-5900	\$380,915	\$407,580	<b>\$394,247</b>

<b>9952-Contributions to Other Funds (A-87 Allocation)</b>			
Cost Center	FY2019 Request	FY2020 Forecast	Calendar 2019 Estimate
527-1000-5900	\$719,457	\$663,875	<b>\$691,666</b>

Expense Object - 7105

Increase FY2018 actual FICA expense by 2.25% consistent with the known wage impacts detailed above.

Expense Object - 7110

The FY2019 Trend Report is not completed at this time. However, unfavorable health insurance cost trends were anticipated in the FY2018 Trend Report. Additionally, the three-year smoothing is less favorable for calendar 2019 rates than it was for calendar 2018 rates (and unfavorable for calendar 2020 rates) but has nonetheless helped to limit the projected increase in health insurance to 22.62%. **Increase FY2018 health insurance actual by 22.62% to reflect these anticipated rate changes.**

The projected FY19 (\$15,951) and FY20 (\$18,042) health insurance rates were blended into a 2019 calendar year rate and divided by the FY2018 base amount (\$13,861) to arrive at the increase factor [(((((\$15,951 + \$18,042) / 2)) / \$13,861) - 1) \* 100].

Expense Object - 7115

Retiree health care (“RHC”) rates are projected to trend slightly down in FY2019 (to 12.47%) and FY2020 (to 12.44%) from a base year rate of 12.59% in FY2018. This decrease is amplified by the projected wage adjustments discussed above (lump sum payments not subject to RHC). Additionally, the Sewer Fund did not have an OPEB adjustment in FY2018 due to changes resulting from the implementation of GASB Statement No. 75.

The RHC factor after consideration of the above rate and wage adjustments is 101.91% (or an increase of 1.91%) for both GREIU and APA members. These factors are then weighted in accordance with union membership within the Sewer Fund [(1.91 \* 84%) + (1.91 \* 16%)].

The factor to establish calendar year 2019's retiree health care cost is 1.91%. **Increase the total of fiscal year 2018's retiree health care by this percent to establish the cost for calendar year 2019.**

Expense Object - 7120

The pension expense factor to translate FY2018 actual costs to estimated calendar 2019 will be 5.35%. **Decrease the total of fiscal year 2018's pension expense by this percent to establish the cost for calendar year 2019.** This reflects the effect of a General Pension rate change decrease from FY18 of 24.59% to a calendar 2019 rate of 22.60% and the projected wage adjustments discussed above (lump sum payments not pensionable). The calendar 2019 rate is a blend of the FY2019 rate (22.93%) and the FY2020 rate (22.26%).

The pension factor after consideration of the above rate and wage adjustments is 94.65% (or a decrease of 5.35%) for GREIU and APA members. These factors are then weighted in accordance with union membership within the Sewer Fund  $[(-5.35 * 84\%) + (-5.35 * 16\%)]$ .

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 9, 2018

TO: Molly J. Eastman  
Fiscal Services Manager

FROM: Michael J. Lunn  
Environmental Services Manager

**SUBJECT: 2018 SEWER RATE STUDY TASK #5  
KNOWN COST ADJUSTMENTS**

Known cost adjustments by which to adjust FY18 operating costs are listed below:

<u>ACCOUNT/User Code</u>	<u>DESCRIPTION</u>	<u>AMOUNT</u>
527-3XXX-5900-8010	GVRBA Contractual Services	(\$719,988.90)
5900-527-1000-8030	Kent County Community Action Program (ICB)	(\$49,897.95)
527-3XXX-5900-9200	Consumers Energy Green Generation Participation	(\$58,174.00)
527-3000-59000-7020	Skilled Trade Bonus Incentives (8.6 FTE)	68,800.00

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: August 17, 2018

TO: Molly J. Eastman  
Fiscal Services Manager

FROM: Jenessa B. Carter  
Financial Analyst

**SUBJECT: 2018 SEWER RATE STUDY TASK #6**

The Sewage Disposal System Fund's revenues and volumes by governmental unit for the year ended June 30, 2018, are disclosed on the attached page. In addition, actual volume comparisons for the past five (5) years by governmental unit are included herein.

Attachments

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
TASK NO. 6**

DETERMINE SEWAGE VOLUME AND REVENUE BY GOVERNMENTAL ENTITY FOR THE YEAR ENDED JUNE 30, 2018:

RETAIL:	<u>SALES REVENUE</u>	<u>3 YR AVE BILLED VOL (GALLONS)</u>
CITY OF GRAND RAPIDS (1)	\$ 35,288,259.75	4,924,643,504
CITY OF WALKER	4,379,798.72	639,947,660
CITY OF KENTWOOD	4,061,947.04	1,045,508,024
CASCADE TOWNSHIP	2,378,120.94	351,755,976
GRAND RAPIDS TOWNSHIP	2,255,408.75	287,766,072
TALLMADGE TOWNSHIP	464,874.99	21,230,484
WRIGHT TOWNSHIP (2)	262,322.86	18,898,293
SUB-TOTAL RETAIL (3)	<u>\$ 49,090,733.05</u>	<u>7,289,750,013</u>
 WHOLESALE:		
CITY OF E. GRAND RAPIDS	\$ 800,994.13	395,861,667
CALEDONIA TOWNSHIP	135,714.28	29,741,000
ADA TOWNSHIP	1,190,533.48	310,576,000
GAINES TOWNSHIP (4)	190,909.91	113,527,000
SUB-TOTAL WHOLESALE	<u>\$ 2,318,151.80</u>	<u>849,705,667</u>
TOTAL	<u>\$ 51,408,884.85</u>	<u>8,139,455,680</u>

REVENUE CLASSIFICATION:

527-1000-5900-6281 RETAIL SEWAGE SERVICE CHARGE	\$ 49,010,962.72
527-1000-5900-6284 WYOMING SEWAGE SERVICE CHARGE	79,770.33
527-1000-5900-6282 WHOLESALE SEWAGE SERVICE CHARGE	2,318,151.80
	<u>\$ 51,408,884.85</u>

- (1) THE VOLUME & REVENUE AMOUNT FOR THE CITY OF WYOMING ARE INCLUDED IN THE GRAND RAPIDS TOTALS.
- (2) CHARGES TO USERS IN WRIGHT TOWNSHIP ARE BASED ON A REU (RESIDENTIAL EQUIVALENT UNIT) CHARGE, IN LIEU OF COMMODITY & MONTHLY SERVICE CHARGES, AND AS SUCH DOES NOT RECORD ANY BILLED VOLUME IN RETAIL SERVICE CHARGES TO WRIGHT TOWNSHIP. THE AMOUNT INCLUDED ABOVE REFLECTS THE ESTIMATED BILLED VOLUME BASED ON THE WRRF'S LIFT STATION PUMPING REPORT FOR FY 2018.
- (3) A NET REVENUE ACCRUAL OF (\$3,341.89) HAS BEEN PRORATED TO ALL RETAIL CUSTOMER COMMUNITIES TO ACCRUE BILLINGS FROM THE LAST READING DATE THROUGH JUNE 30, 2018, AND ADJUST FOR PREVIOUS FISCAL YEAR ACCRUAL.
- (4) GAINES TWP RATES ARE CALCULATED BASED ON MOST RECENT FISCAL YEAR BILLED VOLUME PER CONTRACT.

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
2018 RATE STUDY TASK NO. 6**

VOLUME COMPARISONS FOR FIVE (5) YEARS BY GOVERNMENTAL UNIT  
VOLUME = 1,000 GALLONS

MUNICIPALITY	FY14		FY15		FY16		FY17		FY18		FY14-FY18	
	VOL BILLED	% CHANGE	VOL BILLED	% CHANGE	VOL BILLED	% CHANGE	VOL BILLED	% CHANGE	VOL BILLED	% CHANGE	VOL BILLED	% CHANGE
GRAND RAPIDS	4,851,466	-0.73%	4,815,852	-0.73%	4,899,755	1.74%	4,942,953	0.88%	4,931,223	-0.24%	4,931,223	1.64%
WALKER	630,628	-3.38%	609,313	-3.38%	622,635	2.19%	650,975	4.55%	646,233	-0.73%	646,233	2.47%
KENTWOOD	1,046,081	-4.57%	998,322	-4.57%	1,034,652	3.64%	1,032,553	-0.20%	1,069,319	3.56%	1,069,319	2.22%
CASCADE	305,066	6.27%	324,180	6.27%	343,441	5.94%	358,774	4.46%	353,054	-1.59%	353,054	15.73%
GRAND RAPIDS TWP	285,476	0.46%	286,787	0.46%	289,396	0.91%	289,525	0.04%	284,378	-1.78%	284,378	-0.38%
TALLMADGE	14,191	11.76%	15,860	11.76%	17,888	12.79%	21,454	19.94%	24,350	13.50%	24,350	71.59%
WRIGHT TWP	14,537	7.73%	15,661	7.73%	18,345	17.14%	19,465	6.11%	18,885	-2.98%	18,885	29.91%
EAST GRAND RAPIDS	304,975	5.77%	322,576	5.77%	352,815	9.37%	393,511	11.53%	441,259	12.13%	441,259	44.69%
ADA TWP	377,714	-16.70%	314,628	-16.70%	320,210	1.77%	315,417	-1.50%	296,101	-6.12%	296,101	-21.61%
CALEDONIA TWP	N/A	N/A	26,242	N/A	25,154	-4.15%	31,631	25.75%	29,741	-5.98%	29,741	N/A
GAINES TWP	75,428	47.82%	111,500	47.82%	118,674	6.43%	133,866	12.80%	113,527	-15.19%	113,527	50.51%
<b>TOTAL</b>	<b>7,905,562</b>	<b>-0.82%</b>	<b>7,840,921</b>	<b>-0.82%</b>	<b>8,042,965</b>	<b>2.58%</b>	<b>8,190,124</b>	<b>1.83%</b>	<b>8,208,070</b>	<b>0.22%</b>	<b>8,208,070</b>	<b>3.83%</b>

GRAND RAPIDS VOLUME COMPARED TO  
CUSTOMER COMMUNITIES

VOLUME = 1,000 GALLONS	FY14		FY15		FY16		FY17		FY18	
	VOL BILLED	% OF TOTAL								
GRAND RAPIDS	4,851,466	61.42%	4,815,852	61.42%	4,899,755	60.92%	4,942,953	60.35%	4,931,223	60.08%
CUSTOMER COMMUNITIES	3,054,096	38.58%	3,025,069	38.58%	3,143,210	39.08%	3,247,171	39.65%	3,276,847	39.92%
<b>TOTAL</b>	<b>7,905,562</b>	<b>100.00%</b>	<b>7,840,921</b>	<b>100.00%</b>	<b>8,042,965</b>	<b>100.00%</b>	<b>8,190,124</b>	<b>100.00%</b>	<b>8,208,070</b>	<b>100.00%</b>

\* Volumes were restated from previous Rate Studies to reflect actual billings without adjustment for accrued revenues.

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
TASK NO. 7**

OPERATING REVENUES OTHER THAN WASTEWATER RECEIPTS:

527-1000-5900

6260	MISCELLANEOUS SERVICE FEES	\$ 4,368.95
6140	INSPECTION FEES - UTILITIES	26,115.00
6723	INTEREST/PENALTIES ON SPEC ASSM	1,178.94

527-(3000/3070)-5900

4912	INDUSTRIAL PRETREATMENT PERMITS	\$ 47,521.30
6421	SALES - OTHER	174.50
6423	SALES OF SCRAP MATERIAL	946.99
6461	INVENTORY WITHDRAWALS (SALES)	41,344.95
		<u>\$ 121,650.63</u>

CREDIT: UNDERUTILIZATION OF PENALTY CREDIT FROM PREVIOUS YEAR \$ 465,959.00

INTEGRATED SYSTEM CREDITS

527-1000/3000-5900

6152	INTEGRATED SEWER CONNECTION*	\$ 435,356.39
6283	SEWAGE SURCHARGE	2,164,651.41
		<u>\$ 2,600,007.80</u>

*\* Reflects adjustment for anticipated revenue loss from new integrated connection fee methodology. See Task9 and 15B for explanation.*

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: August 13, 2018

TO: Molly Eastman  
Fiscal Services Manager

FROM: Mike Lunn  
Environmental Services Manager

**SUBJECT: 2018 SEWER RATE STUDY- TASK #8**

There are no significant changes in operating levels are anticipated to take effect by January 1, 2019, which would require adjustments to operating costs for the test period.

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: August 30, 2018

TO: Molly Eastman  
Fiscal Services Manager

FROM: Mike Lunn  
Environmental Services Manager

**SUBJECT: 2018 SEWER RATE STUDY- TASK #9**

In July 2017, the Utility Advisory Board (“UAB”) approved the adoption of the new methodology for connection to the water and sewer systems, implemented in April 2018. The projected impact of this methodology change for the full FY19 is a reduction in sewer operating revenues of approximately \$258,658.69.

ML

# MEMORANDUM

CITY OF GRAND RAPIDS

**DATE:** October 8, 2018

**TO:** Molly J. Eastman  
Fiscal Services Manager

**FROM:** Charles R. Schroeder, PE  
Assistant ESD Manager

**SUBJECT: 2018 SEWER RATE STUDY- TASK #10**

The following are sewage system projects that should be considered operative as of January 1, 2019.

<u>Description</u>	<u>Location</u>	<u>Proj. Code</u>	<u>Cost</u>
ESCSO Contract No 28B	Grand Rapids	590718082	\$2,350,000
Rumsey Street, Oakland to Sheridan and Century Avenue	Grand Rapids	590218068 590118068	1,950,000
Grandville Ave, Franklin to Bartlett	Grand Rapids	590217029	600,000
Newberry St – Monroe to Division	Grand Rapids	590117069	390,000
Ottawa from Cherry to Oakes	Grand Rapids	590218044	350,000
Oakland Ave (DTE Energy)	Grand Rapids	Contribution	153,571
Oxford Place Apts Phase 3	Grand Rapids	Contribution	102,868
Atlas Avenue – Wealthy to Lake Dr	Grand Rapids	590117149	100,000
Village at 1300 Three Mile	Grand Rapids	Contribution	92,805
Old Hawk Court – Blackhawk Condo	GR Township	Contribution	253,376
Michigan St – Utility Ext in GRT	GR Township	Contribution	240,654
Bayberry Chase Apartments	Cascade	Contribution	103,964
Wing Ave and Paris Park Dr	Kentwood	590118058	802,500
Bretonfield Preserve Phase 1	Kentwood	Contribution	326,210
Blairview Parkway (Pvt) Village East	Kentwood	Contribution	87,404
Sessions Pointe PUD Phase 2	Tallmadge	Contribution	373,300
Valley Site Farms	Walker	Contribution	164,469
Leonard Street Utility Ext Walker	Walker	590118077	50,000
			<u>\$8,491,121</u>

*CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
TASK NO. 11*

COMPUTE ACCUMULATED COST, DEPRECIATION AND DEPRECIATION EXPENSE AS OF JUNE 30, 2018

*INTEGRATED SYSTEM*

	ORIGINAL COST	ACCUMULATED DEPRECIATION	DEPRECIATION EXPENSE
LAND & EASEMENTS	\$ 1,672,532	\$ -	\$ -
LAND IMPROVEMENTS	16,315,449	14,096,669	276,363
BUILDINGS & STRUCTURES	51,829,610	33,261,821	1,089,013
PROCESS EQUIPMENT	69,921,366	39,377,503	1,814,912
AUXILIARY EQUIPMENT	28,673,619	25,767,281	452,716
MACHINERY & EQUIPMENT	6,430,779	5,034,347	187,947
OFFICE EQUIPMENT & FURNITURE	494,401	486,548	234
	<u>\$ 175,337,756</u>	<u>\$ 118,024,169</u>	<u>\$ 3,821,185</u>

*NON-INTEGRATED SYSTEM*

	ORIGINAL COST	ACCUMULATED DEPRECIATION	DEPRECIATION EXPENSE
LAND & EASEMENTS	\$ 3,578,322	\$ -	\$ -
LAND IMPROVEMENTS	3,486,637	1,868,992	174,377
BUILDINGS & STRUCTURES	10,948,179	3,853,271	257,902
PROCESS EQUIPMENT	16,842,826	8,167,504	524,386
AUXILIARY EQUIPMENT	3,898,571	3,347,990	174,733
MACHINERY & EQUIPMENT	1,645,774	1,626,522	12,978
OFFICE EQUIPMENT & FURNITURE	68,632	68,632	-
SERVICEMAINS - GRAND RAPIDS	385,664,199	123,840,420	7,250,772
SERVICEMAINS - WALKER	40,764,471	17,614,683	786,281
SERVICEMAINS - KENTWOOD	41,243,091	17,294,566	808,374
SERVICEMAINS - CASCADE TWP	22,044,963	9,303,734	439,583
SERVICEMAINS - GRAND RAPIDS TWP	18,875,516	8,033,361	364,287
SERVICEMAINS - TALLMADGE TWP	5,894,622	1,706,722	117,873
SERVICEMAINS - WRIGHT TWP	125,288	31,322	2,505
	<u>\$ 555,081,091</u>	<u>\$ 196,757,719</u>	<u>\$ 10,914,051</u>
TOTAL	<u>\$ 730,418,847</u>	<u>\$ 314,781,888</u>	<u>\$ 14,735,236</u>

SOURCE: GENERAL LEDGER, AS ADJUSTED, FOR JUNE 30, 2018.

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
TASK NO. 12**

TASK 12A DETERMINE WORKING CAPITAL NEEDS FOR MATERIALS AND SUPPLIES ON HAND.

MATERIALS AND SUPPLIES INVENTORY AS OF JUNE 30, 2018: \$ 928,263

TASK 12B DETERMINE WORKING CAPITAL NEEDS FOR PREPAYMENT OF OPERATING COSTS.

NO REQUIREMENT FOR PREPAYMENT OF OPERATING COSTS IS CALLED FOR IN THE ORDINARY CYCLE OF BUSINESS.

TASK 12C DETERMINE CASH WORKING CAPITAL NEEDS & DETERMINE TOTAL WORKING CAPITAL NEEDS.

MINIMUM CASH WORKING CAPITAL IS DEFINED AS THE SUM OF 90 DAYS ADJUSTED OPERATING EXPENSES.

ADJUSTED CURRENT ANNUAL EXPENSES = \$ 29,320,024 @ 90/365 = \$ 7,229,595

TOTAL WORKING CAPITAL NEEDS CONSIST OF THE FOLLOWING:

12A	INVESTMENT IN INVENTORY	\$	928,263
12B	PREPAYMENT OF OPERATING EXPENSES		-
12C	90 DAY OPERATING EXPENSES		7,229,595
			8,157,858
		\$	8,157,858

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: August 30, 2018

TO: Molly J. Eastman  
Fiscal Services Manager

FROM: Charles R. Schroeder, PE  
Assistant ESD Manager

**SUBJECT: 2018 SEWER RATE STUDY TASK #13  
ZONEGATING & JOINT USE ALLOCATION METHODS**

Lengths and costs of all zoned interceptor and trunk sewer mains as well as jointly used lift stations are allocated to customer communities based on the 2016 Comprehensive Master Plan update performed by Black & Veatch, Ltd. and adjusted annually for the changes in billed flow for each customer community.

CITY OF GRAND RAPIDS, MICHIGAN  
SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND

METHODOLOGY FOR I/I & OTHER FLOW APPORTIONMENT - TASK NO. 13

	MILLION GALLONS
1.) ANNUAL WASTEWATER TREATMENT PLANT FLOW	14,705.27
LESS: WHOLESALE BILLED FLOW	(880.63)
LESS: RETAIL BILLED FLOW	<u>(7,327.44)</u>
TOTAL RETAIL I/I & OTHER FLOW	<u>6,497.20</u>
2.) RETAIL INFLOW FROM SEPARATED AREAS (A)	380.87
RETAIL INFLOW FROM COMBINED AREAS - AMOUNT ESTIMATED (A)	569.89
LESS: ANNUAL BYPASS FROM (3) PUMPING STATIONS	-
LESS: IN-SYSTEM BYPASS & RETENTION BASIN OVERFLOW	<u>(62.32)</u>
TOTAL RETAIL INFLOW	<u>888.44</u>
3.) RETAIL INFILTRATION:	
TOTAL RETAIL I/I & OTHER FLOW	6,497.20
LESS: TOTAL RETAIL INFLOW (#2)	<u>(888.44)</u>
LESS: MARKET AVE RETENTION BASIN (MARB) CAPTURE	5,608.76
TOTAL RETAIL INFILTRATION & OTHER FLOW	<u>(93.53)</u>
4.) ALLOCATION OF RETAIL INFILTRATION & OTHER FLOW - APPORTIONED ON THE BASIS OF B&V SUMMARY OF 2018 MONITORED FLOW DATA (B)	

	MILLION GALLONS
GOVERNMENTAL UNIT(S)	5,515.23
UTILITY PARTNERS	<u>5,515.23</u>
TOTAL	<u>5,515.23</u>
PRORATA SHARE OF RETAIL INFILTRA- TION & OTHER	100.0000%
	<u>100.0000%</u>

(A) BASED ON RECORDED RAINFALL @ WWTP & APPORTIONED PER BLACK & VEATCH'S SUMMARY OF 2018 MONITORED FLOW DATA.  
(B) BASED ON INFILTRATION & OTHER FLOW APPORTIONED IN PREVIOUS YEAR & ADJUSTED FOR SYSTEM ADDITIONS & IMPROVEMENTS  
IN EACH CUSTOMER COMMUNITY.

CITY OF GRAND RAPIDS, MICHIGAN  
SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
METHODOLOGY FOR I/I & OTHER FLOW APPORTIONMENT - TASK NO. 13 (CONTINUED)

5.) SUMMARY: (IN MILLION GALLONS)	BILLED FLOW (TASK #6)	INFLOW (#2 ABOVE)	INFILTRATION & OTHER FLOW (#4 ABOVE)	MARB (A) (#3 ABOVE)	TOTAL PLANT FLOW	PERCENT OF TOTAL	TOTAL PLANT FLOW (MGD)
GOVERNMENTAL UNIT(S)	8,064.80	888.44	5,515.23	91.90	14,560.37	99.0146%	39.8915
UTILITY PARTNERS	113.53	-	-	1.29	114.82	0.7808%	0.3146
GAINES TWP	8,208.07	888.44	5,515.23	93.53	14,705.27	100.0000%	40.2885
TOTAL							

(A) BASED ON BILLED FLOW (TASK #6).

# MEMORANDUM

CITY OF GRAND RAPIDS

**Date:** August 13, 2018

**To:** Molly Eastman, Fiscal Services Manager

**From:** Mike Lunn  
Environmental Services Manager

**Subject:** 2018 Sewer Rate Study – WRRF Flow Data

Listed below is the Water Resource Recovery Facility (WRRF) flow data measured in million gallons (MG) for the last three completed fiscal years. Plant flow decreased by 4.30% from 15,367.59 MG treated in FY2017 to 14,705.27 MG treated in FY2018. The final in system Combined Sewer Overflow point was eliminated July 13, 2015 and are no longer applicable to this report.

Month	FY 2016	FY 2017	FY 2018	% incr (decr)
July	1,224.90	1,082.78	1,116.92	3.20%
August	1,104.71	1,280.12	1,057.36	-17.40%
September	1,061.77	1,118.15	900.72	-19.40%
October	1,028.49	1,198.52	1,360.70	13.50%
November	1,040.24	1,147.76	1,275.47	11.10%
December	1,145.87	1,238.41	1,100.71	-11.10%
January	1,250.69	1,505.68	1,284.44	-14.70%
February	1,239.81	1,115.35	1,496.30	34.20%
March	1,485.36	1,270.60	1,320.38	3.90%
April	1,624.04	1,774.21	1,276.56	-28.00%
May	1,493.75	1,450.57	1,394.57	-3.90%
June	1,119.50	1,185.44	1,121.14	-5.40%
<b>Total</b>	<b>14,819.13</b>	<b>15,367.59</b>	<b>14,705.27</b>	<b>-4.30%</b>
<b>Data measured</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>% incr (decr)</b>
Wastewater Treatment Plan (WRRF) avg. daily flow (MG)	40.600	42.219	40.288	-4.60%
Rainfall recorded at WRRF (inches)	32.360	32.750	23.180	-29.20%
Market Avenue Retention Basin (MARB) inflow (MG)	8.680	141.940	155.850	9.80%
Market Avenue Retention Basin (MARB) over flow (MG)	-	38.670	62.320	61.20%

cc: Jeff McCaul, Acting City Engineer

**SUMMARY FOR YEAR:FY2018  
CITY OF GRAND RAPIDS, MICHIGAN  
RATE STUDY REPORT  
OVERFLOW VOLUMES**

<b>DATE</b>	<b>Ranfall Inches (1)</b>	<b>MARB MG (2)</b>
2/20/2018	2.53	0.33
2/21/2018	0.30	54.26
2/22/2018	0.00	5.39
2/24/2018	0.11	1.97
<b>Totals</b>	<b>2.94</b>	<b>61.95</b>
1. Rain Gauge at WRRF		
2. Market Avenue Retention Basin		

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 18, 2018

TO: Molly J. Eastman  
Fiscal Services Manager

FROM: Charles R. Schroeder, PE  
Assistant ESD Mgr.

**SUBJECT: 2018 SEWER RATE STUDY – TASK #14**

Zonegating maps for the sewage system are included in the 2016 Comprehensive Master Plan update from Black & Veatch, Ltd. The report also contains comprehensive information with respect to the basis for zonegating service mains and other system components, such as lift stations, that service more than one community. All zonegating work papers are on file at the Wastewater Treatment Plant Administration Building located at 1300 Market Ave., SW, Grand Rapids, MI 49503. All zonegating maps are on file at the City Engineers Office located at 300 Monroe Ave, NW, Grand Rapids, MI 49503.

CRS\crs

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
TASK NO. 15**

COMPUTE CONSTRUCTION COST RATE BASE (NET BOOK VALUE OF ASSETS, PLUS WORKING CAPITAL, LESS CSO REVENUE REQUIREMENTS FOR CSO FIXED ASSETS INCLUDED IN TASK #11/21, LESS CONTRIBUTIONS BY OTHERS).

ORIGINAL CONSTRUCTION COST	- TASK #10	\$ 8,491,121	
	- TASK #11/21	729,613,847	
	- TASK #16/21	<u>(186,061,019)</u>	\$ 552,043,949
LESS: ACCUMULATED DEPRECIATION	- TASK #10	\$ -	
	TASK #11/21	314,685,620	
	TASK #16/21	<u>(85,393,849)</u>	<u>(229,291,771)</u>
			322,752,178
WORKING CAPITAL REQUIREMENT	- TASK #12	\$ 8,157,858	
		<u>8,157,858</u>	<u>8,157,858</u>
			330,910,036
CONTRIBUTIONS BY OTHERS	- TASK #21	\$ 195,149,846	
LESS: AMORTIZATION		(139,147,848)	
		<u>(56,001,998)</u>	<u>(56,001,998)</u>
CONSTRUCTION COST RATE BASE			<u><u>\$ 274,908,038</u></u>

# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 10, 2018

TO: Molly J. Eastman  
Fiscal Services Manager

FROM: Arden Postma, P.E.  
Hydraulic Engineer

**SUBJECT: 2018 Sewer Rate Study Integrated Connection Fees Task #15A**

Attached is the Integrated Water and Sewer Connection Fee Schedule of rates effective January 1, 2019. Per the Fifth Amendment to the Water & Sanitary Sewer Service Agreements, adopted by City Commission on March 27, 2018 (Res. 87571), the methodology for connection to the water and sewer systems is calculated based on the cost of connection to the System and is evaluated annually as part of the Rate Study and shall be administered the same across the retail system.

The integrated connection fees effective January 1, 2019, shall be as follows:

Residential Users (three residential units or less)

Plan Review and Connection Fee (PRC Fee)			
Meter Size	2018	2019	% Change
3/4 inch	\$350	\$350	0%
1 inch	\$360	\$360	0%
1-1/2 inch	\$360	\$360	0%

All other Users (including residential of more than 3 units, commercial, industrial, governmental and religious)

Plan Review and Connection Fee (PRC Fee)			
Meter Size	2018	2019	% Change
3/4 inch	\$670	\$680	1%
1 inch	\$850	\$870	2%
1-1/2 inch	\$1,120	\$1,140	2%
2 inch	\$1,570	\$1,610	3%
3 inch	\$1,910	\$1,960	3%
4 inch	\$2,650	\$2,730	3%
6 inch	\$3,850	\$3,970	3%

Plus a Meter Capacity Fee based on the meter size (when water and sanitary sewer connections are made at the same time only one Meter Capacity Fee shall be charged) as follows:

<b>Meter Capacity Charge</b>			
<b>Meter Size</b>	<b>2018</b>	<b>2019</b>	<b>% Change</b>
3/4 inch	\$175	\$210	20%
1 inch	\$250	\$250	0%
1-1/2 inch	\$800	\$800	0%
2 inch	\$900	\$900	0%
3 inch	\$1,100	\$1,100	0%
4 inch	at cost	at cost	N/A
6 inch	at cost	at cost	N/A

Fire Protection Review Fee

<b>Fire Service Review Fee</b>			
	<b>2018</b>	<b>2019</b>	<b>% Change</b>
All Fire Service Sizes	\$680	\$695	2%

AP

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
CSO REVENUE REQUIREMENTS - TASK 16  
PRINCIPAL & INTEREST ON REVENUE BONDS & SRF  
DEBT FOR CALENDAR YEAR 2018 - ACCRUAL BASIS**

DATE	SRF/REVENUE REFERENCE	5073- SERIES	REVENUE BONDS			TOTAL			TOTAL PRINCIPAL & INTEREST
			PRINCIPAL	INTEREST	EST. FEES	PRINCIPAL	INTEREST	PRINCIPAL	
07/01/19	N/A	1998	(1)	\$ 200,079.25	\$ 375.00	\$ -	\$ 200,454.25	\$ 200,454.25	200,454.25
01/01/20	N/A	1998	(1)	200,079.25	375.00	2,320,296.00	200,454.25	2,520,750.25	
07/01/19	N/A	2010A	(2)	317,096.14	800.00	0.00	317,896.14	317,896.14	317,896.14
01/01/20	N/A	2010A	(2)	317,096.14	800.00	0.00	317,896.14	317,896.14	317,896.14
07/01/19	N/A	2013	(3)	612,602.50	600.00	0.00	613,202.50	613,202.50	613,202.50
01/01/20	N/A	2013	(3)	612,602.50	600.00	384,362.50	613,202.50	997,565.00	
07/01/19	N/A	2014	(4)	642,005.00	625.00	0.00	642,630.00	642,630.00	642,630.00
01/01/20	N/A	2014	(4)	642,005.00	625.00	465,800.00	642,630.00	1,108,430.00	
07/01/19	N/A	2016	(5)	387,213.75	625.00	0.00	387,838.75	387,838.75	387,838.75
01/01/20	N/A	2016	(5)	387,213.75	625.00	506,550.00	387,838.75	894,388.75	
						<u>\$3,677,008.50</u>	<u>\$4,324,043.27</u>	<u>\$8,001,051.77</u>	

(1) PRORATED AMOUNT OF 1998 ISSUE RELATED TO CSO DEBT.

(2) DS ON ES CSO PORTION OF 2010A&B ISSUE. (\$14.05M)

(3) PRORATED AMOUNT OF 2013 ISSUE RELATED TO CSO DEBT.

(4) PRORATED AMOUNT OF 2014 ISSUE RELATED TO CSO DEBT.

(5) DS ON ES CSO PORTION OF REFUNDED 2008 ISSUE.

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
TASK NO. 16A**

INCLUDE MAJOR PROJECT COST FOR UPCOMING SYSTEM IMPROVEMENTS (NON-INTEGRATED)  
THE ESTIMATED TOTAL PROJECT COST FOR RECOMMENDED SEWAGE SYSTEM IMPROVEMENTS  
ARE SUMMARIZED IN THE FOLLOWING TABLE.

ITEM NO.	DESCRIPTION	ESTIMATED COST	BUDGET YEAR
1	HASTINGS ST - LAFAYETTE AVE TO COLLEGE AVE	\$167,000	2020
2	STATE ST - LAFAYETTE AVE TO MADISON AVE	\$60,000	2020
3	A.C. FORCEMAIN REPLACEMENT - LINCOLN SCHOOL L.S.	\$675,000	2020
4	A.C. FORCEMAIN REPLACEMENT - EASTERN AVE L.S.	\$1,000,000	2020
5	GODFREY AVE - LIBERTY ST TO OXFORD ST	\$200,000	2020
6	BERKSHIRE ST - GIDDINGS AVE TO KALAMAZOO AVE	\$225,000	2020
7	GODFREY AVE - OXFORD ST TO MARKET AVE	\$200,000	2020
8	WORDEN ST - MADISON AVE TO EASTERN AVE	\$540,000	2021
9	GODFREY AVE - OXFORD ST TO MARKET AVE	\$1,500,000	2021
10	NORWICH AVE - OXFORD ST TO HAYDEN ST	\$27,000	2021
11	PRINCE ST - MADISON AVE TO EASTERN AVE	\$513,000	2021
12	THOMAS ST - MADISON AVE TO FULLER AVE	\$243,000	2022
13	GODFREY AVE - LIBERTY ST TO OXFORD ST	\$340,000	2022
14	GODFREY AVE - OXFORD ST TO MARKET AVE	\$3,500,000	2022
15	GARFIELD AVE - FULTON ST TO VETO ST, ET AL	\$100,000	2022
16	LAFAYETTE AVE - FULTON ST TO FOUNTAIN ST	\$200,000	2022
17	CASCADE/KENTWOOD SANITARY TRUNK SEWER	\$300,000	2022
18	BRANDYWINE SANITARY TRUNK SEWER	\$100,000	2022
19	GODFREY AVE - LIBERTY ST TO OXFORD ST	\$1,000,000	2023
20	OTTAWA AVE - FAIRBANKS ST TO MONROE	\$200,000	2023
21	LAFAYETTE AVE - FOUNTAIN ST TO MICHIGAN ST	\$270,000	2023
22	GODFREY AVE - LIBERTY ST TO OXFORD ST	\$1,000,000	2024
23	OTTAWA AVE - FAIRBANKS ST TO MONROE	\$900,000	2024
24	SHELDON BLVD - OAKES ST TO WESTON ST	\$396,000	2024
25	CASCADE/KENTWOOD SANITARY TRUNK SEWER	\$300,000	2024
26	BRANDYWINE SANITARY TRUNK SEWER	\$1,250,000	2024
		<u>\$ 15,206,000</u>	

NOTE: NONE OF THE PROJECTS ABOVE ARE INCLUDED IN RECOMMENDED REVENUE REQUIREMENTS FOR CALENDAR YEAR 2019. COSTS SHOWN ARE IN 2018 DOLLARS.

SOURCE: CHUCK SCHROEDER, ASSISTANT ENVIRONMENTAL SERVICES MANAGER, NOVEMBER 2018

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
TASK NO. 17**

**BONDS - PRINCIPAL & INTEREST PAYMENTS (SENIOR)**

FISCAL YEAR ENDING JUNE 30,	PRINCIPAL	INTEREST	PRIN & INT
2019	\$ 9,145,000	\$ 12,312,995	\$ 21,457,995
2020	8,595,000	12,847,570	21,442,570
2021	8,990,000	12,406,420	21,396,420
2022	10,855,000	11,955,320	22,810,320
2023	11,400,000	11,395,020	22,795,020
2024	11,970,000	10,828,170	22,798,170
2025	12,565,000	10,232,920	22,797,920
2026	13,200,000	9,608,070	22,808,070
2027	13,870,000	8,950,586	22,820,586
2028	14,500,000	8,311,005	22,811,005
2029	10,465,000	7,641,630	18,106,630
2030	10,970,000	7,148,209	18,118,209
2031	11,490,000	6,630,742	18,120,742
2032	12,040,000	6,088,580	18,128,580
2033	12,650,000	5,489,508	18,139,508
2034	14,905,000	4,860,040	19,765,040
2035	13,385,000	4,117,961	17,502,961
2036	8,840,000	3,452,022	12,292,022
2037	9,270,000	3,021,587	12,291,587
2038	9,725,000	2,570,158	12,295,158
2039	7,915,000	2,114,298	10,029,298
2040	8,275,000	1,760,446	10,035,446
2041	8,645,000	1,390,386	10,035,386
2042	4,815,000	1,003,700	5,818,700
2043	2,865,000	783,750	3,648,750
2044	3,015,000	640,500	3,655,500
2045	2,275,000	489,750	2,764,750
2046	2,385,000	376,000	2,761,000
2047	2,505,000	256,750	2,761,750
2048	2,630,000	131,500	2,761,500
	<b>\$ 274,155,000</b>	<b>\$ 168,815,594</b>	<b>\$ 442,970,594</b>

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
TASK NO. 18**

DETERMINE SEWER SYSTEM EQUITY IN THE CONSTRUCTION COST RATE BASE BY  
SUBTRACTING DEBT OUTSTANDING FROM THE TOTAL RATE BASE.

CONSTRUCTION COST RATE BASE - TASK NO. 15	\$ 274,908,038
LESS: BONDED INDEBTEDNESS IN CCRB (CASH BASIS) - TASK NO. 20	(126,620,124)
NET SEWER SYSTEM EQUITY	<u><u>\$ 148,287,914</u></u>

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
RATE OF RETURN ON EQUITY - TASK NO. 19**

AT THE APRIL 5, 1977, COMMITTEE OF THE WHOLE MEETING, THE CITY COMMISSION DECIDED THE LEVEL OF RETURN ON SEWER SYSTEM EQUITY. THE LEVEL DECIDED UPON WAS ONE PERCENT MORE THAN THE AVERAGE BOND BUYER'S INDEX OF MUNICIPAL BONDS FOR THE PREVIOUS TWELVE MONTH PERIOD.

BOND BUYER'S INDEX OF 20 MUNICIPAL BONDS

<u>DATE</u>	<u>RATE</u>	<u>DATE</u>	<u>RATE</u>
28-Sep-17	3.641%	29-Mar-18	3.892%
05-Oct-17	3.631%	05-Apr-18	3.902%
12-Oct-17	3.611%	12-Apr-18	3.852%
19-Oct-17	3.531%	19-Apr-18	3.872%
26-Oct-17	3.651%	26-Apr-18	3.970%
02-Nov-17	3.672%	03-May-18	3.886%
09-Nov-17	3.492%	10-May-18	3.876%
16-Nov-17	3.516%	17-May-18	3.946%
23-Nov-17	3.512%	24-May-18	3.896%
30-Nov-17	3.590%	31-May-18	3.780%
07-Dec-17	3.292%	07-Jun-18	3.880%
14-Dec-17	3.412%	14-Jun-18	3.916%
21-Dec-17	3.562%	21-Jun-18	3.866%
28-Dec-17	3.442%	28-Jun-18	3.866%
04-Jan-18	3.442%	05-Jul-18	3.856%
11-Jan-18	3.542%	12-Jul-18	3.846%
18-Jan-18	3.522%	19-Jul-18	3.826%
25-Jan-18	3.592%	26-Jul-18	3.900%
01-Feb-18	3.722%	02-Aug-18	3.950%
08-Feb-18	3.732%	09-Aug-18	3.976%
15-Feb-18	3.842%	16-Aug-18	3.950%
22-Feb-18	3.862%	23-Aug-18	3.936%
01-Mar-18	3.850%	30-Aug-18	3.960%
08-Mar-18	3.882%	06-Sep-18	3.975%
15-Mar-18	3.892%	13-Sep-18	4.055%
22-Mar-18	3.902%	20-Sep-18	4.145%
		<u>52 WEEKS</u>	<u>3.772%</u>

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
TASK NO. 20**

DETERMINE COMPOSITE RATE OF RETURN ON CONSTRUCTION COST RATE BASE

	RATE BASE		RATE OF RETURN		RETURN ON INVESTMENT
SEWER SYSTEM EQUITY IN THE CONSTRUCTION COST RATE BASE (CCRB)	\$ 148,287,914	@	4.772%	=	\$ 7,076,299
SEWER SYSTEM INDEBTEDNESS IN THE CCRB					
1998 BONDS (refunded 1990 Bonds)	5,879,430	@	5.06%	=	297,499
2008 KCDC CONTRACT	89,000	@	4.90%	=	4,361
2010 BONDS	29,625,000	@	5.00%	=	1,481,250
2010A&B BONDS	9,235,000	@	4.37%	=	403,570
2011 SRF BONDS	4,639,675	@	2.50%	=	115,992
2012 BONDS	25,530,000	@	4.48%	=	1,143,744
2013 BONDS (refunded 2004 Bonds)	7,382,850	@	4.43%	=	327,060
2013 SRF BONDS	1,055,000	@	2.00%	=	21,100
2014 BONDS (refunded 2005 Bonds)	12,294,400	@	4.99%	=	613,491
2016 BONDS (partially refunded 2008 Bonds)	30,498,300	@	5.00%	=	1,524,915
2018 BONDS (amt in CCRB)	391,469	@	5.00%	=	19,573
LESS INTEREST ON BOND RESERVE ACCOUNTS					(199,536)
	\$ 274,908,038				\$ 12,829,318
COMPOSITE RATE OF RETURN ON INVESTMENT			\$ 12,829,318	=	\$274,908,038
					4.667%

**Noted Disclosure:**

TOTAL BONDED INDEBTEDNESS IN CCRB (from above) \$ 126,620,124      TASK NO. 18

CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
CONSTRUCTION COST RATE BASE & RETURN ON SYSTEM INVESTMENT- TASK NO. 21- PART1  
FISCAL YEAR ENDED JUNE 30, 2018

PHYSICAL LOCATION

DESCRIPTION	RETAIL										WHOLESALE					TOTAL
	INTEGRATED SYSTEM	CITY OF GR	CITY OF WALKER	CITY OF KENTWOOD	CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADE TOWNSHIP	WRIGHT TOWNSHIP	CITY OF EAST GR	CALEDONIA TOWNSHIP	ADA TOWNSHIP	GAINES TOWNSHIP				
COST	\$ 175,337,756	\$ 226,130,724	\$ 40,836,485	\$ 30,953,087	\$ 21,000,002	\$ 21,968,053	\$ 5,542,805	\$ 118,230	\$ -	\$ -	\$ -	\$ -	\$ 521,917,142			
LESS: ACCUMULATED DEPRECIATION	118,024,169	49,434,445	18,052,080	14,452,729	9,141,897	8,512,599	1,612,414	65,752	-	-	-	-	219,296,085			
NET BOOK VALUE	\$ 57,313,587	\$ 176,696,279	\$ 22,784,405	\$ 16,500,358	\$ 11,858,105	\$ 13,455,454	\$ 3,930,391	\$ 52,478	\$ -	\$ -	\$ -	\$ -	\$ 302,621,057			
WORKING CAPITAL REQUIREMENT	5,212,626	1,823,608	361,475	254,688	180,941	246,938	31,326	26,758	3,345	979	11,503	3,671	8,157,858			
	\$ 62,526,213	\$ 178,519,887	\$ 23,145,880	\$ 16,755,046	\$ 12,039,046	\$ 13,732,392	\$ 3,961,717	\$ 79,236	\$ 3,345	\$ 979	\$ 11,503	\$ 3,671	\$ 310,779,915			
CONTRIBUTIONS	50,267,769	57,213,107	24,999,745	23,911,899	18,523,842	15,439,818	4,793,676	-	-	-	-	-	195,149,846			
LESS AMORTIZATION	(46,404,519)	(48,458,460)	(12,214,649)	(13,153,472)	(8,688,016)	(7,049,273)	(1,446,558)	-	-	-	-	-	(137,414,947)			
	\$ (3,863,240)	\$ (8,754,647)	\$ (12,785,096)	\$ (10,768,427)	\$ (9,835,826)	\$ (8,380,545)	\$ (3,347,118)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (57,734,899)			
CONSTRUCTION COST RATE BASE	\$ 58,662,973	\$ 169,765,240	\$ 10,360,784	\$ 5,996,619	\$ 2,203,220	\$ 5,341,847	\$ 614,599	\$ 79,236	\$ 3,345	\$ 979	\$ 11,503	\$ 3,671	\$ 253,044,016			
RETURN ON INVESTMENT- TASK 20	4.667%	\$ 7,922,944	\$ 483,538	\$ 279,862	\$ 102,824	\$ 249,304	\$ 28,683	\$ 3,698	\$ 156	\$ 46	\$ 537	\$ 171	\$ 11,809,564			
ZONEGATED																
COST	\$ -	\$ 93,434	\$ 6,198,658	\$ 2,435,510	\$ 4,306,526	\$ 5,517,233	\$ 1,850,372	\$ 1,726,922	\$ 363,128	\$ 253,522	\$ 6,405,295	\$ 976,207	\$ 30,126,807			
LESS: ACCUMULATED DEPRECIATION	-	(469,269)	2,236,230	1,505,176	1,184,254	1,886,385	444,389	575,726	239,862	153,851	1,646,662	592,420	9,995,686			
NET BOOK VALUE	\$ -	\$ 562,703	\$ 3,962,428	\$ 930,334	\$ 3,122,272	\$ 3,630,848	\$ 1,405,983	\$ 1,151,196	\$ 123,266	\$ 99,671	\$ 4,758,633	\$ 383,787	\$ 20,131,121			
WORKING CAPITAL REQUIREMENT	-	\$ 562,703	\$ 3,962,428	\$ 930,334	\$ 3,122,272	\$ 3,630,848	\$ 1,405,983	\$ 1,151,196	\$ 123,266	\$ 99,671	\$ 4,758,633	\$ 383,787	\$ 20,131,121			
CONTRIBUTIONS	-	13	6,603	1,050,662	295,863	138,544	225	208	1,504	210,756	242,778	811,469	2,758,625			
LESS AMORTIZATION	-	(7)	(6,603)	(693,437)	(195,270)	(91,853)	(225)	(208)	(993)	(120,421)	(160,234)	(463,650)	(1,732,901)			
	\$ -	\$ (6)	\$ -	\$ (357,225)	\$ (100,593)	\$ (46,691)	\$ -	\$ -	\$ (511)	\$ (90,335)	\$ (82,544)	\$ (347,819)	\$ (1,025,724)			
CONSTRUCTION COST RATE BASE	\$ 562,697	\$ 562,697	\$ 3,962,428	\$ 573,109	\$ 3,021,679	\$ 3,584,157	\$ 1,405,983	\$ 1,151,196	\$ 122,755	\$ 9,336	\$ 4,676,089	\$ 35,968	\$ 19,105,397			
RETURN ON INVESTMENT- TASK 19/21	8.272%	\$ 46,546	\$ 327,772	\$ 47,408	\$ 249,953	\$ 296,481	\$ 116,303	\$ 95,227	\$ 10,154	\$ 772	\$ 386,806	\$ 1,679	\$ 1,579,101			
RETURN ON INVESTMENT- TASK 19/21	8.272%	\$ 7,969,490	\$ 811,310	\$ 327,270	\$ 352,777	\$ 545,785	\$ 144,986	\$ 98,925	\$ 10,310	\$ 818	\$ 387,343	\$ 1,850	\$ 13,386,665			
TOTAL RETURN ON INVESTMENT		\$ 2,737,801	\$ 811,310	\$ 327,270	\$ 352,777	\$ 545,785	\$ 144,986	\$ 98,925	\$ 10,310	\$ 818	\$ 387,343	\$ 1,850	\$ 13,386,665			

CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
CONSTRUCTION COST & ACCUMULATED DEPRECIATION- TASK NO. 21- PART2  
FISCAL YEAR ENDED JUNE 30, 2018

CONSTRUCTION COST

COST CENTER	AMOUNT	RETAIL						WHOLESALE					
		CITY OF GR	CITY OF WALKER	CITY OF KENTWOOD	CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADGE TOWNSHIP	WRIGHT TOWNSHIP	EAST GR	CITY OF CALEDONIA	ADA TOWNSHIP	GAINES TOWNSHIP	TOTAL
BY PHYSICAL LOCATION-TASK 11		\$ 418,860,837	\$ 44,153,567	\$ 41,243,091	\$ 22,743,620	\$ 21,632,062	\$ 6,251,568	\$ 196,346	\$ -	\$ -	\$ -	\$ -	\$ 730,418,847
ADD: IN SERVICE-TASK 10		6,089,244	214,469	1,216,114	103,964	494,030	373,300	-	-	-	-	-	8,491,121
MARINE CONNECTOR AGREEMENT		(211,573)	-	-	-	-	(515,311)	(78,116)	-	-	-	-	(805,000)
SADDLEBACK SEWER		(1,187,160)	-	-	-	-	-	-	-	-	-	-	-
TASK 11/16/21- CSO FA AMT		(186,061,019)	-	-	-	-	-	-	-	-	-	-	(186,061,019)
LIFT STATIONS / CHAMBERS:													
FULLER-BROOKVIEW	\$ 1,252,883	(719,774)	-	-	-	719,774	-	-	-	-	-	-	-
FULTON- MIDDLEBORROW	37,983	(37,983)	-	-	-	37,983	-	-	-	-	-	-	-
WEALTHY ST EXT. CHAMBER	458,953	(135,813)	120,351	-	-	-	15,462	-	-	-	-	-	-
WEALTHY	20,444	(6,701)	6,396	-	-	-	46	259	-	-	-	-	-
MARKET	12,965,095	(1,512,508)	1,209,903	-	-	223,259	41,229	38,117	-	-	-	-	-
VANPORTFLIET / LEONARD HTS	1,239,326	387,203	(387,203)	-	-	-	-	-	-	-	-	-	-
REMEMBRANCE /3 MILE	1,213,244	(225,760)	-	-	-	-	33,801	191,959	-	-	-	-	-
16th AVENUE	71,058	-	-	-	-	-	(141,105)	141,105	-	-	-	-	-
HAYES- WEST	141,105	-	-	-	-	-	-	-	-	-	-	-	-
HAYES- EAST	215,841	-	-	-	-	-	-	-	-	-	-	-	-
O'BRIEN	546,532	41,613	(102,442)	-	-	-	60,829	-	-	-	-	-	-
SERVICEMAINS		(9,282,208)	2,045,862	(10,186,315)	2,387,491	4,408,178	1,273,358	1,355,482	363,128	253,522	6,405,295	976,207	-
ADJUSTED BY ZONEGATING		\$ 226,224,158	\$ 47,035,143	\$ 33,388,597	\$ 25,306,528	\$ 27,515,286	\$ 7,393,177	\$ 1,845,152	\$ 363,128	\$ 253,522	\$ 6,405,295	\$ 976,207	\$ 552,043,949
ZONEGATING ADJUSTMENT		\$ -	\$ 93,434	\$ 6,198,658	\$ 4,306,526	\$ 5,517,233	\$ 1,850,372	\$ 1,726,922	\$ 363,128	\$ 253,522	\$ 6,405,295	\$ 976,207	\$ 30,126,807
PHYSICAL LOCATION		\$ 226,130,724	\$ 40,836,485	\$ 30,953,087	\$ 21,000,002	\$ 21,998,053	\$ 5,542,805	\$ 118,230	\$ -	\$ -	\$ -	\$ -	\$ 521,917,142

ACCUMULATED DEPRECIATION

BY PHYSICAL LOCATION-TASK 11		\$ 140,312,373	\$ 19,001,676	\$ 17,294,566	\$ 9,525,960	\$ 8,632,955	\$ 1,905,371	\$ 84,818	\$ -	\$ -	\$ -	\$ -	\$ 314,761,888
ADD: IN SERVICE-TASK 10		(154,446)	-	-	-	-	(122,931)	(19,066)	-	-	-	-	(296,443)
MARINE CONNECTOR AGREEMENT		(85,393,849)	-	-	-	-	-	-	-	-	-	-	200,175
SADDLEBACK SEWER		-	-	-	-	-	-	-	-	-	-	-	(85,393,849)
TASK 11/16/21- CSO ACC DEP		-	-	-	-	-	-	-	-	-	-	-	-
LIFT STATIONS / CHAMBERS:													
FULLER-BROOKVIEW	\$ 778,709	(447,361)	-	-	-	447,361	-	-	-	-	-	-	-
FULTON- MIDDLEBORROW	37,983	(37,983)	-	-	-	37,983	-	-	-	-	-	-	-
WEALTHY ST EXT. CHAMBER	178,074	(52,695)	46,696	-	-	-	5,999	-	-	-	-	-	-
WEALTHY	20,444	(6,701)	6,396	-	-	-	46	259	-	-	-	-	-
MARKET	7,012,306	(818,055)	654,388	-	-	120,752	22,299	20,616	-	-	-	-	-
VANPORTFLIET / LEONARD HTS	306,145	95,649	(95,649)	-	-	-	-	-	-	-	-	-	-
REMEMBRANCE /3 MILE	688,917	-	(128,193)	-	-	-	19,193	109,000	-	-	-	-	-
16th AVENUE	53,496	-	-	-	-	-	(86,465)	86,465	-	-	-	-	-
HAYES- WEST	86,465	-	-	-	-	-	-	-	-	-	-	-	-
HAYES- EAST	112,184	22,471	(55,319)	-	-	-	32,848	-	-	-	-	-	-
O'BRIEN	295,128	(4,554,227)	868,315	(1,525,404)	788,759	1,159,933	280,443	359,386	239,862	153,851	1,646,662	592,420	-
SERVICEMAINS		\$ 48,965,176	\$ 20,288,310	\$ 15,957,905	\$ 10,326,151	\$ 10,398,984	\$ 2,056,803	\$ 641,478	\$ 239,862	\$ 153,851	\$ 1,646,662	\$ 592,420	\$ 229,291,771
ADJUSTED BY ZONEGATING		\$ -	\$ (489,269)	\$ 1,505,176	\$ 1,184,254	\$ 1,886,385	\$ 444,389	\$ 575,726	\$ 239,862	\$ 153,851	\$ 1,646,662	\$ 592,420	\$ 9,995,886
ZONEGATING ADJUSTMENT		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PHYSICAL LOCATION		\$ 118,024,169	\$ 49,434,445	\$ 14,452,729	\$ 9,141,897	\$ 8,512,599	\$ 1,612,414	\$ 65,752	\$ -	\$ -	\$ -	\$ -	\$ 219,296,085



CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
RECONCILIATION OF CONSTRUCTION COST & ACCUMULATED DEPRECIATION- PHYSICAL LOCATION & ZONEGATING  
FISCAL YEAR ENDED JUNE 30, 2018

COST CENTER	AMOUNT	CONSTRUCTION COST- BY PHYSICAL LOCATION:										TOTAL		
		INTEGRATED SYSTEM	CITY OF GR	CITY OF WALKER	CITY OF KENTWOOD	RETAIL CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADGE TOWNSHIP	WRIGHT TOWNSHIP	CITY OF EASTGR	CALEDONIA TOWNSHIP		WHOLESALE ADA TOWNSHIP	GAINES TOWNSHIP
BY PHYSICAL LOCATION- TASK 11		\$ 175,337,756	\$ 426,133,140	\$ 40,764,471	\$ 41,243,091	\$ 22,044,963	\$ 18,875,516	\$ 5,894,622	\$ 125,288	\$ -	\$ -	\$ -	\$ -	\$ 730,418,847
IN SERVICE- TASK 10		-	6,089,244	214,469	1,216,114	103,964	494,030	373,300	-	-	-	-	-	8,491,121
MARINE CONNECTOR AGREEMENT		-	(211,573)	-	-	-	-	(515,311)	(78,116)	-	-	-	-	(803,000)
SADDLEBACK SEWER		-	(1,187,160)	-	1,115,707	71,453	-	-	-	-	-	-	-	(186,061,019)
TASK 11/16/21- CSO COST		-	(186,061,019)	-	-	-	-	-	71,058	-	-	-	-	-
O'BRIEN		-	(546,532)	546,532	-	-	-	-	-	-	-	-	-	-
VANPORTLIET / LEONARD HTS		-	1,239,326	1,239,326	-	-	-	-	-	-	-	-	-	-
REMEMBRANCE / 3 MILE		-	(1,213,244)	1,213,244	-	-	-	-	-	-	-	-	-	-
16th AVENUE		-	(71,058)	-	-	-	-	-	-	-	-	-	-	-
HAYES- WEST		-	(141,105)	-	-	-	-	141,105	-	-	-	-	-	-
HAYES- EAST		-	(215,841)	-	-	-	-	215,841	-	-	-	-	-	-
KINGSBURY	\$	-	(323,154)	323,154	-	-	66,841	-	-	-	-	-	-	-
MEADOWWOOD TRAILS		-	(66,841)	-	-	-	-	-	-	-	-	-	-	-
OAK HOLLOW		-	(66,840)	-	-	-	66,840	-	-	-	-	-	-	-
COLLINDALE		-	(66,840)	-	-	-	-	-	-	-	-	-	-	-
THORNAPPLE		-	(224,216)	66,840	-	-	224,216	-	-	-	-	-	-	-
6000 28TH ST		-	(111,401)	-	-	-	111,401	-	-	-	-	-	-	-
THORNHILLS		-	(118,407)	-	-	-	118,407	-	-	-	-	-	-	-
ROBINHOOD		-	(178,399)	-	-	-	178,399	-	-	-	-	-	-	-
CASCADE SPRINGS		-	(65,478)	-	-	-	65,478	-	-	-	-	-	-	-
SHOREHAVEN		-	(72,602)	-	-	-	72,602	-	-	-	-	-	-	-
EAGLECREST		-	(152,332)	-	-	-	152,332	-	-	-	-	-	-	-
GREENBRIER		-	(48,486)	-	-	-	48,486	-	-	-	-	-	-	-
LINCOLN SCHOOL		-	(153,651)	-	-	-	153,651	-	-	-	-	-	-	-
REEDS LAKE		-	(962,898)	-	-	-	962,898	-	-	-	-	-	-	-
KRAFT		-	(72,602)	-	-	-	72,602	-	-	-	-	-	-	-
ORCHARD VISTA		-	(39,712)	-	-	-	39,712	-	-	-	-	-	-	-
BIRD AVE-ALPINE ESTATES		-	(797,860)	-	-	-	797,860	-	-	-	-	-	-	-
EAST PARIS		-	(323,478)	-	-	-	323,478	-	-	-	-	-	-	-
SERVICE MAINS		-	(23,602,073)	(13,840,328)	(19,707,869)	(2,312,401)	(140,457)	(590,665)	-	-	-	-	(60,193,793)	
LESS: SERVICE MAINS- TOTAL SUBS- PHY. LOC.		-	12,242,482	10,308,777	7,086,044	393,366	12,418	23,913	-	-	-	-	30,067,000	
ADD: SERVICE MAINS- TOTAL ADDS- PHY. LOC.		-	-	-	-	-	-	-	-	-	-	-	-	
TOTAL- PHYSICAL LOCATION COST		\$ 175,337,756	\$ 226,130,738	\$ 40,836,486	\$ 30,953,087	\$ 21,000,002	\$ 21,998,053	\$ 5,542,805	\$ 118,230	\$ -	\$ -	\$ -	\$ 521,917,166	
CONSTRUCTION COST- ZONEGATING:														
LIFT STATIONS / CHAMBERS:														
FULLER-BROOKVIEW	\$	1,252,893	(719,774)	-	-	-	719,774	-	-	-	-	-	-	-
FULTON- MIDDLEBORROW		37,993	(37,993)	-	-	-	37,993	-	-	-	-	-	-	-
WEALTHY ST EXT. CHAMBER		458,953	(135,813)	120,351	-	-	-	15,462	-	-	-	-	-	-
WEALTHY		20,444	(6,701)	6,396	-	-	-	46	259	-	-	-	-	-
MARKET		12,965,095	(1,512,508)	1,209,503	-	-	223,259	41,229	38,117	-	-	-	-	-
VANPORTLIET / LEONARD HTS		1,239,326	387,203	(387,203)	-	-	-	-	-	-	-	-	-	-
REMEMBRANCE / 3 MILE		1,213,244	(225,760)	-	-	-	-	33,801	191,959	-	-	-	-	-
16th AVENUE		71,058	-	-	-	-	-	-	-	-	-	-	-	-
HAYES- WEST		141,105	-	-	-	-	-	(141,105)	141,105	-	-	-	-	-
HAYES- EAST		215,841	-	-	-	-	-	-	-	-	-	-	-	-
O'BRIEN		546,532	(102,442)	-	-	-	-	60,829	-	-	-	-	-	-
SERVICE MAINS- ZONEGATED COST		-	2,077,397	5,577,413	2,435,510	4,306,526	4,536,217	1,840,110	1,355,482	363,128	6,405,295	976,207	30,126,807	
TOTAL- ZONEGATED COST		-	\$ 93,434	\$ 6,198,658	\$ 2,435,510	\$ 4,306,526	\$ 5,517,233	\$ 1,850,372	\$ 1,726,922	\$ 363,128	\$ 6,405,295	\$ 976,207	\$ 30,126,807	
GRAND TOTAL- COST		\$ 175,337,756	\$ 226,224,172	\$ 47,035,143	\$ 33,388,597	\$ 25,306,528	\$ 27,515,286	\$ 7,393,177	\$ 1,846,152	\$ 363,128	\$ 6,405,295	\$ 976,207	\$ 552,043,963	

CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
RECONCILIATION OF CONSTRUCTION COST & ACCUMULATED DEPRECIATION- PHYSICAL LOCATION & ZONEGATING  
FISCAL YEAR ENDED JUNE 30, 2018

COST CENTER	AMOUNT	PHYSICAL LOCATION:										TOTAL		
		INTEGRATED SYSTEM	CITY OF GR	CITY OF WALKER	CITY OF KENTWOOD	RETAIL	CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADGE TOWNSHIP	WRIGHT TOWNSHIP	CITY OF EASTGR		CALEDONIA TOWNSHIP	ADA TOWNSHIP
BY PHYSICAL LOCATION- TASK 11	\$ 118,024,169	\$ 141,786,689	\$ 17,792,577	\$ 17,294,566	\$ 9,720,825	\$ 8,283,148	\$ 1,777,232	\$ 102,682	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 314,781,888
IN SERVICE- TASK 10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MARINE CONNECTOR AGREEMENT	-	(154,446)	-	-	-	-	(122,931)	(19,066)	-	-	-	-	-	(296,443)
SADDLEBACK SEWER	-	-	-	188,743	11,432	-	-	-	-	-	-	-	-	200,175
TASK 11/16/21- CSO ACC. DEPRECIATION	-	(85,393,849)	-	-	-	-	-	-	-	-	-	-	-	(85,393,849)
O'BRIEN	\$	(295,128)	295,128	-	-	-	-	-	-	-	-	-	-	-
VANPORTLIET	-	(306,145)	306,145	-	-	-	-	-	-	-	-	-	-	-
REMEMBRANCE / 3 MILE	-	(688,917)	688,917	-	-	-	-	-	-	-	-	-	-	-
16th AVENUE	-	(53,496)	-	-	-	-	-	-	-	-	-	-	-	-
HAYES- WEST	-	(86,465)	-	-	-	-	-	-	-	-	-	-	-	-
HAYES- EAST	-	(112,184)	-	-	-	-	-	-	-	-	-	-	-	-
KINGSBURY	-	(117,978)	117,978	-	-	-	-	-	-	-	-	-	-	-
MEADOWWOOD TRAILS	\$	(17,824)	-	-	-	17,824	-	-	-	-	-	-	-	-
OAK HOLLOW	-	(17,824)	-	-	-	-	-	-	-	-	-	-	-	-
COLLINDALE	-	(17,824)	17,824	-	-	-	-	-	-	-	-	-	-	-
THORNAPPLE	-	(113,685)	-	-	-	113,685	-	-	-	-	-	-	-	-
6000 28TH ST	-	(33,420)	33,420	-	-	33,420	-	-	-	-	-	-	-	-
THORNHILLS	-	(43,416)	43,416	-	-	43,416	-	-	-	-	-	-	-	-
ROBINHOOD	-	(71,360)	71,360	-	-	71,360	-	-	-	-	-	-	-	-
CASCADE SPRINGS	-	(41,469)	41,469	-	-	41,469	-	-	-	-	-	-	-	-
SHOREHAVEN	-	(29,041)	29,041	-	-	29,041	-	-	-	-	-	-	-	-
EAGLECREST	-	(55,855)	55,855	-	-	55,855	-	-	-	-	-	-	-	-
GREENBRIER	-	(16,162)	16,162	-	-	16,162	-	-	-	-	-	-	-	-
LINCOLN SCHOOL	-	(47,503)	47,503	-	-	47,503	-	-	-	-	-	-	-	-
REEDS LAKE	-	(249,787)	249,787	-	-	249,787	-	-	-	-	-	-	-	-
KRAFT	-	(29,041)	29,041	-	-	29,041	-	-	-	-	-	-	-	-
ORCHARD VISTA	-	(13,237)	13,237	-	-	13,237	-	-	-	-	-	-	-	-
BIRD AVE-ALPINE ESTATES	-	(205,395)	205,395	-	-	205,395	-	-	-	-	-	-	-	-
EAST PARIS	-	(150,956)	150,956	-	-	150,956	-	-	-	-	-	-	-	-
SERVICE MAINS	-	(11,416,995)	(3,822,574)	(5,147,260)	(465,516)	(177,200)	(177,200)	-	-	-	-	-	-	(21,161,575)
LESS: SERVICE MAINS-TOTAL SUBS- PHY. LOC.	-	6,087,369	2,872,977	2,116,680	70,021	7,174	7,174	-	-	-	-	-	-	11,165,894
ADD: SERVICE MAINS- TOTAL ADDS- PHY. LOC.	\$ 118,024,169	\$ 48,094,656	\$ 18,268,972	\$ 14,452,729	\$ 9,628,854	\$ 9,006,674	\$ 1,682,924	\$ 137,112	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 219,296,090

ACCUMULATED DEPRECIATION- ZONEGATED

LIFT STATIONS / CHAMBERS:	\$ 778,709	-	-	-	-	-	-	-	-	-	-	-	-	-
FULLER-BROOKVIEW	37,983	(447,361)	-	-	-	447,361	-	-	-	-	-	-	-	-
FULTON- MIDDLEBORROW	178,074	(37,983)	-	-	-	37,983	-	-	-	-	-	-	-	-
WEALTHY ST EXT. CHAMBER	20,444	(52,695)	46,696	-	-	-	5,999	-	-	-	-	-	-	-
MARKET	7,012,306	(6,701)	6,396	-	-	-	46	259	-	-	-	-	-	-
VANPORTLIET	306,145	(818,055)	654,388	-	-	120,752	22,299	20,616	-	-	-	-	-	-
REMEMBRANCE / 3 MILE	688,917	95,649	(95,649)	-	-	-	-	-	-	-	-	-	-	-
16th AVENUE	53,496	-	(128,193)	-	-	-	19,193	109,000	-	-	-	-	-	-
HAYES- WEST	86,465	-	-	-	-	-	(86,465)	86,465	-	-	-	-	-	-
HAYES- EAST	112,184	-	-	-	-	-	-	32,848	-	-	-	-	-	-
O'BRIEN	295,128	22,471	(55,319)	-	-	-	-	-	-	-	-	-	-	-
SERVICEMAINS-ZONEGATED ACC. DEPRECIATION	-	775,406	1,807,911	1,505,176	1,184,254	1,280,289	450,469	359,386	239,862	153,851	1,646,662	592,420	9,995,686	
TOTAL- ZONEGATED ACC. DEPRECIATION	\$ -	\$ (469,269)	\$ 2,236,230	\$ 1,505,176	\$ 1,184,254	\$ 1,886,365	\$ 444,389	\$ 575,726	\$ 239,862	\$ 153,851	\$ 1,646,662	\$ 592,420	\$ 9,995,686	
GRAND TOTAL- ACC. DEPRECIATION	\$ 118,024,169	\$ 47,625,387	\$ 20,505,202	\$ 15,957,905	\$ 10,813,108	\$ 10,893,059	\$ 2,127,313	\$ 712,838	\$ 239,862	\$ 153,851	\$ 1,646,662	\$ 592,420	\$ 229,291,776	

CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
ADJUSTED OPERATING EXPENSE ZONEGATING ALLOCATION BY GOVERNMENTAL UNIT - TASK #22  
FISCAL YEAR ENDED JUNE 30, 2018

COST CENTER	ADJUSTED EXPENSE BY COST CENTER	INTEGRATED SYSTEM	RETAIL					WHOLESALE						
			CITY OF GR	CITY OF WALKER	CITY OF KENTWOOD	CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADGE TOWNSHIP	WRIGHT TOWNSHIP	CITY OF EAST GR	CALEDONIA TOWNSHIP	ADA TOWNSHIP	GAINES TOWNSHIP	
WASTEWATER TREATMENT	\$ 16,796,149	\$ 16,796,149												
LIFT STATIONS:														
A. INTERCEPTOR	303,116	267,754	28,287	-	-	-	5,220	964	891	-	-	-	-	-
B. TRUNK	130,100	34,154	52,572	21,188	-	-	18,278	3,908	-	-	-	-	-	-
C. LOCAL COLLECTOR	624,057	127,344	85,953	-	-	-	128,326	26,787	31,624	-	-	6,698	-	-
SEWER LINES:														
A. INTERCEPTOR	290,667	167,613	41,560	73,434	8,060	-	-	-	-	-	-	-	-	-
B. TRUNK	646,018	227,204	160,510	148,965	58,277	-	-	17,023	724	-	-	-	-	-
C. LOCAL COLLECTOR	4,596,664	2,859,447	577,571	446,888	279,891	-	-	52,126	27,074	-	-	-	-	-
D. ZONEGATING		(111,442)	11,908	(24,898)	22,132	-	-	(6,435)	19,065	-	-	-	-	-
BULK METERING STATIONS	4,179	-	-	2,873	-	-	-	-	-	-	-	-	-	244
CUSTOMER ACCOUNTING *	3,222,043	2,506,298	246,422	201,732	85,255	-	-	9,924	9,924	-	-	-	-	-
INDUSTRIAL PRETREATMENT	578,264	578,264												
SUBTOTAL OPERATING EXPENSE	27,191,256	17,374,413	6,078,372	848,994	603,129	823,190	104,297	89,302	11,166	3,127	38,212	12,272	934	
ADMINISTRATIVE EXPENSE	2,128,768	1,323,050	521,038	91,743	64,650	45,928	62,685	7,942	850	238	2,910	934		
TOTAL	\$ 29,320,024	\$ 18,697,463	\$ 6,599,410	\$ 1,296,526	\$ 913,644	\$ 649,057	\$ 885,875	\$ 112,239	\$ 96,102	\$ 3,365	\$ 41,122	\$ 13,206		

\* Reflects adjustment for circuit breaker provisions per the third amendment to W/S service agreements.

METHOD OF DISTRIBUTION

WASTEWATER TREATMENT	100.000%	100.00%												
LIFT STATIONS:														
A. INTERCEPTORS (54)	100.000%	(1)	-	-	-	-	-	-	-	-	-	-	-	-
B. TRUNK (8)	100.000%	(3)	(3)	-	(1)	(1)	(1)	(1)	-	-	-	-	-	-
C. LOCAL (45)	100.000%	(9)	(3)	-	(9)	(9)	(9)	(5)	(1)	-	(1)	-	-	-
SEWER LINES:														
TOTAL MILES: 920.07														
A. INTERCEPTOR MILES 48.33	100.000%	57.665%	14.298%	25.264%	2.773%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
B. TRUNK MILES 107.42	100.000%	35.170%	24.846%	23.059%	9.021%	5.157%	2.635%	0.112%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
C. LOCAL COLLECTOR MILES 764.32	100.000%	62.207%	12.565%	9.722%	6.089%	7.694%	1.134%	0.589%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
D. ZONEGATING MILES (3)	100.000%	475.45	96.04	74.31	46.54	58.81	8.67	4.50	-	-	-	-	-	-
BULK METERING STATIONS (3)	100.000%	(18.53)	1.98	(4.14)	3.68	5.47	(1.07)	3.17	1.68	0.52	5.24	2.00	(1)	(1)
CUSTOMER ACCTG (1)	100.000%	77.786%	7.648%	6.261%	2.646%	5.043%	0.308%	0.308%	0.308%	-	-	-	-	-
NO. OF METERS 75,121.00		58,435.00	5,745.00	4,703.00	1,988.00	3,788.00	231.00	231.00	231.00	-	-	-	-	-
INDUSTRIAL PRETREATMENT	100.000%	100.00%												
ADMINISTRATIVE EXPENSE (2)	100.000%	62.151%	24.476%	4.310%	3.037%	2.157%	2.945%	0.373%	0.319%	0.040%	0.137%	0.044%	0.044%	0.044%

NOTES:

- (1) MAINTENANCE & COLLECTION COSTS ARE ALLOCATED ON THE NUMBER OF METERS, INCLUSIVE OF USERS FOR WRIGHT TWP.
- (2) ALLOCATED ON DIRECT OPERATING EXPENSE, ADJUSTED FOR ANY COST ASSIGNABLE EXCLUSIVELY TO GR OR RETAIL COMMUNITIES, IF APPLICABLE.

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
TASK NO. 23**

ASSIGN OTHER OPERATING REVENUES TO EACH GOVERNMENTAL ENTITY.

BASIS OF ALLOCATION: RETAIL BILLINGS BY GOVERNMENTAL ENTITY - TASK NO. 6 & 7

	<u>RETAIL BILLINGS</u>	<u>PERCENTAGE OF TOTAL</u>	<u>ALLOCATION *</u>
CITY OF GRAND RAPIDS	\$ 35,288,260	71.8837%	\$ 422,396
CITY OF WALKER	4,379,799	8.9218%	52,425
CITY OF KENTWOOD	4,061,947	8.2744%	48,621
CASCADE TOWNSHIP	2,378,121	4.8443%	28,466
GRAND RAPIDS TOWNSHIP	2,255,409	4.5944%	26,997
TALLMADGE TOWNSHIP	464,875	0.9470%	5,565
WRIGHT TOWNSHIP	262,323	0.5344%	3,140
	<u>\$ 49,090,734</u>	<u>100.0000%</u>	<u>\$ 587,610</u>

*\* Reflects adjustment for circuit breaker provisions per 3rd amendment of W/S agreements*

CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
ASSIGN DEPRECIATION EXPENSE TO CUSTOMER COMMUNITIES - TASK NO. 24  
FISCAL YEAR ENDED JUNE 30, 2018

COST CENTER	DEPRECIATION EXPENSE	INTEGRATED SYSTEM	RETAIL					WHOLESALE					TOTAL	
			CITY OF GR	CITY OF WALKER	CITY OF KENTWOOD	CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADGE TOWNSHIP	WRIGHT TOWNSHIP	CITY OF EAST GR	CALEDONIA TOWNSHIP	ADA TOWNSHIP		GAINES TOWNSHIP
BY PHYSICAL LOCATION- TASK 11		\$ 3,821,185	\$ 8,201,954	\$ 908,797	\$ 808,374	\$ 462,872	\$ 411,676	\$ 117,873	\$ 2,505	\$ -	\$ -	\$ -	\$ -	\$ 14,735,236
ADD: IN SERVICE- TASK 10		-	121,784	4,289	24,322	2,079	9,881	7,466	-	-	-	-	-	169,821
MARNE CONNECTOR AGREEMENT		-	(4,785)	-	-	-	-	(10,307)	(1,563)	-	-	-	-	(16,655)
SADDLEBACK SEWER		-	(3,774,613)	-	-	1,429	-	-	-	-	-	-	-	23,742
LESS: TASK 11/16/21- CSO DEP. EXP.		-	-	-	-	-	-	-	-	-	-	-	-	(3,774,613)
LIFT STATIONS / CHAMBERS:														
FULLER-BROOKVIEW (GR)	\$ 26,326		(15,124)	-	-	-	15,124	-	-	-	-	-	-	-
FULTON- MIDDLEBORO (GR)	-		(2,444)	2,166	-	-	-	278	-	-	-	-	-	-
WEALTHY ST EXT. CHAMBER	8,261		-	-	-	-	-	-	-	-	-	-	-	-
MARKET	393,343		(45,887)	36,707	-	-	6,773	1,251	1,156	-	-	-	-	-
VANPORTFLIET	34,991		10,932	(10,932)	-	-	-	1,741	9,889	-	-	-	-	-
REMEMBRANCE / 3 MILE	62,502		-	(11,630)	-	-	-	1,741	9,889	-	-	-	-	-
O'BRIEN	12,023		915	(2,253)	-	-	-	1,338	-	-	-	-	-	-
KINGSBURY	10,772		-	-	-	-	-	-	-	-	-	-	-	-
MEADOWOOD TRAILS	2,228		-	-	-	-	-	-	-	-	-	-	-	-
OAK HOLLOW	2,228		-	-	-	-	-	-	-	-	-	-	-	-
COLLINDALE	2,228		-	-	-	-	-	-	-	-	-	-	-	-
THORNAPPLE	7,474		-	-	-	-	-	-	-	-	-	-	-	-
6000 28TH ST	3,713		-	-	-	-	-	-	-	-	-	-	-	-
THORNHILLS	3,947		-	-	-	-	-	-	-	-	-	-	-	-
ROBINHOOD	5,947		-	-	-	-	-	-	-	-	-	-	-	-
CASCADE SPRINGS	2,183		-	-	-	-	-	-	-	-	-	-	-	-
SHOREHAVEN	2,420		-	-	-	-	-	-	-	-	-	-	-	-
EAGLECREST	5,078		-	-	-	-	-	-	-	-	-	-	-	-
GREENBRIER	1,616		-	-	-	-	-	-	-	-	-	-	-	-
LINCOLN SCHOOL	5,121		-	-	-	-	-	-	-	-	-	-	-	-
REEDS LAKE	24,979		-	-	-	-	-	-	-	-	-	-	-	-
KRAFT	2,420		-	-	-	-	-	-	-	-	-	-	-	-
ORCHARD VISTA	1,324		-	-	-	-	-	-	-	-	-	-	-	-
16TH AVE	1,570		(1,570)	-	-	-	-	-	1,570	-	-	-	-	-
HAYES- WEST	3,190		(3,190)	-	-	-	-	-	3,190	-	-	-	-	-
HAYES- EAST	4,421		(4,421)	-	-	-	-	4,421	-	-	-	-	-	-
BIRD AVE-ALPINE ESTATES	23,258		(23,258)	-	-	-	23,258	-	-	-	-	-	-	-
EAST PARIS	10,783		(10,783)	-	-	-	10,783	-	-	-	-	-	-	-
SERVICEMANS		3,821,185	(146,629)	30,791	(214,353)	44,771	82,017	24,849	26,914	4,829	123,583	18,595	11,137,531	
ADJUSTED BY ZONEGATING			4,302,881	957,935	640,566	511,151	559,512	148,910	43,661	4,829	123,583	18,595		
LESS CONTRIBUTIONS AMORTIZED		(1,005,355)	(1,128,192)	(466,963)	(461,758)	(370,477)	(305,331)	(95,919)	-	-	-	(14,384)	(3,846,379)	
TASK NO. 21		\$ 2,815,830	\$ 3,174,689	\$ 490,972	\$ 178,898	\$ 140,674	\$ 254,181	\$ 52,991	\$ 43,661	\$ 4,829	\$ 123,583	\$ 4,211	\$ 7,283,152	
TOTAL														

CITY OF GRAND RAPIDS, MICHIGAN  
SEWAGE DISPOSAL SYSTEM FUND  
ACCUMULATE REVENUE REQUIREMENTS BY CUSTOMER COMMUNITIES - TASK NO. 25  
FISCAL YEAR ENDED JUNE 30, 2018

	RETAIL					WHOLESALE					TOTAL	
	CITY OF GR	CITY OF WALKER	CITY OF KENTWOOD	CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADGE TOWNSHIP	WRIGHT TOWNSHIP	CITY OF EAST GR	CALEDONIA TOWNSHIP	ADA TOWNSHIP		GAINES TOWNSHIP
COST CENTER												
OPERATION & MAINTENANCE EXPENSE- TASK NO. 22	\$ 18,697,463	\$ 6,599,410	\$ 913,644	\$ 649,057	\$ 885,875	\$ 112,239	\$ 96,102	\$ 12,016	\$ 3,365	\$ 41,122	\$ 13,206	\$ 29,320,024
DEPRECIATION EXPENSE	2,815,830	3,174,689	178,898	140,674	254,181	52,991	43,661	4,633	4,829	123,583	4,211	7,289,152
RETURN ON SYSTEM INVESTMENT	2,737,801	7,969,490	327,270	352,777	545,785	144,986	98,925	10,310	818	387,343	1,850	13,388,665
REVENUE CREDITS- TASK NO. 23	(422,396)	(52,425)	(48,621)	(28,466)	(26,997)	(5,565)	(3,140)					(587,610)
CSO DEBT SERVICE REQUIREMENTS ALLOCATE:	8,001,052											8,001,052
INTEGRATED SYSTEM CREDITS	(1,505,641)	(259,770)	(339,850)	(165,368)	(111,287)	(16,100)	(8,827)	(88,235)	(16,204)	(88,726)	-	(2,600,008)
INTEGRATED SYSTEM (A)	13,933,943	2,404,037	3,145,139	1,530,394	1,029,901	148,990	81,685	816,578	149,962	821,112	189,353	-
LESS: CIRCUIT BREAKER (B)	(228,120)	-	-	-	(53,684)	-	(26,025)				189,353	(307,829)
CAPITAL INVESTMENT REIMBURSEMENT (C)			107,854									107,854
	\$ -	\$ 37,522,426	\$ 4,284,334	\$ 2,479,068	\$ 2,523,774	\$ 437,541	\$ 282,381	\$ 755,302	\$ 142,770	\$ 1,284,434	\$ 208,620	\$ 54,611,300

(A) ALLOCATED TO CUSTOMER COMMUNITIES UNDER OLD CONTRACT BASIS OF PLANT FLOW. REMAINING ALLOCATION TO UAB PARTNERS UNDER UNIFORM SERVICE AGREEMENTS BASED ON PLANT FLOW & LAND, AS NOTED BELOW:

	RETAIL					WHOLESALE					TOTAL	
	CITY OF GR	CITY OF WALKER	CITY OF KENTWOOD	CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADGE TOWNSHIP	WRIGHT TOWNSHIP	CITY OF EAST GR	CALEDONIA TOWNSHIP	ADA TOWNSHIP		GAINES TOWNSHIP
OLD METHOD- PLANT FLOW	\$ 13,933,943	2,404,037	3,145,139	1,530,394	1,029,901	148,990	81,685	816,578	149,962	821,112	189,353	\$ 24,061,741
NEW METHOD- PLANT FLOW / LAND	\$ 13,933,943	\$ 2,404,037	\$ 3,145,139	\$ 1,530,394	\$ 1,029,901	\$ 148,990	\$ 81,685	\$ 816,578	\$ 149,962	\$ 821,112	\$ 189,353	\$ 24,251,094

(B) PURSUANT TO CITY AND CUSTOMER COMMUNITY CIRCUIT BREAKER, AS PROVIDED FOR BY THE THIRD AMENDMENT TO THE UNIFORM SERVICE AGREEMENTS.  
(C) PER COMMISSION APPROVED PAYBACK AGREEMENT, THE CITY OF KENTWOOD IS FINANCING THE PAYBACK OF A LOAN THROUGH THE SEWER SYSTEM ENTERPRISE FUND OVER FOUR YEARS BEGINNING WITH THE 2015 RATE STUDY.

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
TASK NO. 25A**

REVIEW THE REVENUE REQUIREMENTS TO ASSURE COMPLIANCE WITH THE APPLICABLE BOND ORDINANCE PROVISIONS.

	<u>YEAR ENDED</u> <u>6/30/18</u>	<u>PRO FORMA *</u> <u>6/30/19</u>
<b>REVENUES:</b>		
RETAIL/WHOLESALE SEWAGE SERVICE	\$ 51,470,778	\$ 52,980,843
CONNECTION FEES/FRONT FOOT FEES	926,109	546,600
SEWAGE SURCHARGES	2,056,797	2,131,500
OTHER OPERATING REVENUES	915,752	728,370
INTEREST ON INVESTMENTS	880,212	621,634
MISCELLANEOUS	9	100
<b>TOTAL REVENUES</b>	<u>\$ 56,249,657</u>	<u>\$ 57,009,047</u>
<b>OPERATING EXPENSES:</b>		
OPERATIONS & MAINTENANCE	\$ 28,847,317	\$ 27,443,015
DEPRECIATION	<u>14,735,236</u>	<u>14,735,236</u>
<b>TOTAL EXPENSES</b>	<u>\$ 43,582,553</u>	<u>\$ 42,178,251</u>
<b>ADDITIONS: DEPRECIATION</b>	<u>14,735,236</u>	<u>14,735,236</u>
<b>NET EARNINGS OF THE SYSTEM</b>	<u><u>\$ 27,402,340</u></u>	<u><u>\$ 29,566,032</u></u>
<b>DEBT SERVICE</b>		
SERIES 2018 BONDS	\$ -	\$ 2,763,500
SERIES 2016 BONDS	2,405,750	3,880,750
SERIES 2014 BONDS	3,464,900	3,468,500
SERIES 2013 BONDS	2,038,000	2,034,800
SERIES 2012 BONDS	2,161,800	2,163,600
SERIES 2010A&B BONDS (after BAB subsidy)	1,253,870	1,256,070
SERIES 2010 BONDS	1,481,250	1,481,250
SERIES 2008 BONDS	1,674,750	-
SERIES 1998 BONDS	<u>4,405,150</u>	<u>4,409,525</u>
SENIOR LIEN	18,885,470	21,457,995
JUNIOR LIEN **	573,074	753,914
<b>TOTAL</b>	<u><u>\$ 19,458,544</u></u>	<u><u>\$ 22,211,909</u></u>
<b>COVERAGE RATIO - SENIOR DEBT</b>	<u>1.45</u>	<u>1.38</u>
<b>COVERAGE RATIO - ALL DEBT</b>	<u><u>1.41</u></u>	<u><u>1.33</u></u>

\* SEWAGE SERVICE ADJUSTED FOR RATE REVISIONS OF 3.08% AND 3.28% EFFECTIVE 1/1/18 AND 1/1/19, RESPECTIVELY; OTHER REVENUES AND OPERATIONS & MAINTENANCE EXPENSE PER 2018 FISCAL PLAN, ADJUSTED FOR CARRYFORWARDS.

\*\* AMOUNTS IN PRO FORMA ARE BASED ON MAXIMUM PRINCIPAL AND DO NOT INCLUDE PRINCIPAL FORGIVENESS IF NOT YET FINALIZED.

**SUMMARY**

**SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
RATE ANALYSIS - TASK NO. 26**

INITIAL SYSTEM REVENUE REQUIREMENTS		\$ 54,811,275
REVENUES FROM CURRENT RATES		
REU CHARGE	\$ 272,411	
MONTHLY METER CHARGE	17,076,517	
MONTHLY BILLING CHARGE	3,974,214	
COMMODITY CHARGE	<u>31,553,736</u>	<u>(52,876,878)</u>
INITIAL REQUIRED REVENUE INCREASE (DECREASE)		<u>\$ 1,934,397</u>
INITIAL PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES		<u>3.66%</u>
INITIAL SYSTEM REVENUE REQUIREMENTS FROM ABOVE		\$ 54,811,275
LESS: AMOUNT OF CIRCUIT BREAKER RELIEF TO REDUCE RR's TO RETAIL		(307,829)
PLUS: CAPITAL INVESTMENT REIMBURSEMENT (KENTWOOD)		107,854
SYSTEM REVENUE REQUIREMENTS		<u>\$ 54,611,300</u>
ACTUAL REQUIRED AMOUNT OF REVENUE INCREASE (DECREASE)		<u>\$ 1,734,422</u>
ACTUAL PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES		<u>3.28%</u>

SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
TASK NO. 26

METER SIZE	EQUIV. FACTOR	CITY OF GR		CITY OF WALKER		CITY OF KENTWOOD		CASCADE TWP		GR TWP		TALLMADGE TWP		WRIGHT TWP	
		METERS*	EQUIV.	METERS*	EQUIV.	METERS*	EQUIV.	METERS*	EQUIV.	METERS*	EQUIV.	METERS*	EQUIV.	USERS*	REU
A 3/4" or less	1.0000	54,351	54,351	5,146	5,146	3,672	3,672	1,506	1,506	3,413	3,413	202	202	-	-
B 1"	1.7778	2,254	4,007	351	624	492	875	254	452	241	428	14	25	-	-
C 1 1/4"	2.7778	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D 1 1/2"	4.0000	953	3,812	149	596	322	1,288	155	620	92	368	8	32	-	-
E 2"	7.1111	669	4,757	80	569	178	1,266	60	427	26	185	3	21	-	-
F 3"	16.0000	100	1,600	6	96	19	304	9	144	8	128	2	32	-	-
G 4"	28.4444	78	2,219	7	199	16	455	3	85	3	85	-	-	-	-
H 6" and over	64.0000	30	1,920	6	384	4	256	1	64	5	320	2	128	-	-
Other- Wright Twp		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	231	422.500
TOTAL		58,435	72,666	5,745	7,614	4,703	8,116	1,988	3,298	3,788	4,927	231	440	231	422.500
															<u>75,121</u>

Source: City of Grand Rapids, Michigan, Water/Sewer Customer Accounts/Meters Report, dated November 1, 2018.

**CITY OF GRAND RAPIDS, MICHIGAN**

**SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
RATE ANALYSIS - TASK NO. 26**

SYSTEM REVENUE REQUIREMENTS \* \$ 37,522,426

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE

72,666 meter equivalents x \$ 13.58 x 12 = \$ 11,841,651

MONTHLY BILLING CHARGE

58,435 meters x \$ 3.75 x 12 = 2,629,575

COMMODITY CHARGE

6,583,748 units (100 CF) x \$ 3.30 = 21,726,368 (36,197,594)

REQUIRED REVENUE INCREASE (DECREASE) \$ 1,324,832

PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES 3.66%

\* REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 228,120

**CITY OF GRAND RAPIDS, MICHIGAN**

**SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
RATE ANALYSIS - TASK NO. 27**

COMMODITY CHARGE:

$$\frac{\text{INTEGRATED SYSTEM COST}}{\text{BILLED UNITS}} = \frac{\$21,934,995}{6,583,748} = \underline{\underline{\$ 3.33 /100 CF *}}$$

MONTHLY SERVICE CHARGE:

SYSTEM REVENUE REQUIREMENTS **		\$ 37,522,426
NEW COMMODITY CHARGE		
6,583,748 x \$ 3.33		\$ 21,923,881
NEW MONTHLY BILLING CHARGE		
58,435 x \$ 3.57 x 12	2,503,355	<u>(24,427,236)</u>
		<u><u>\$ 13,095,190</u></u>

$$\text{MONTHLY METER CHARGE} = \frac{\$13,095,190}{72,666 \times 12} = \underline{\underline{\$ 15.02 \text{ MONTHLY}}}$$

<u>METER SIZE</u>	<u>EQUIVALENT</u>	<u>MONTHLY SERVICE CHARGE</u>			<u>PRESENT</u>
		<u>METER</u>	<u>BILLING</u>	<u>TOTAL</u>	
3/4" or less	1.0000	\$ 15.02	\$ 3.57	\$ 18.59	\$ 17.33
1"	1.7778	26.70	3.57	30.27	27.89
1 1/4"	2.7778	41.72	3.57	45.29	41.47
1 1/2"	4.0000	60.08	3.57	63.65	58.07
2"	7.1111	106.81	3.57	110.38	100.32
3"	16.0000	240.32	3.57	243.89	221.03
4"	28.4444	427.23	3.57	430.80	390.02
6" and over	64.0000	961.28	3.57	964.85	872.87

\* NEW RATES EFFECTIVE, ON A PRO-RATA BASIS, JANUARY 1, 2019

\*\*REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 228,120

**CITY OF WALKER, MICHIGAN**  
**SEWER RATE STUDY**  
**SEWAGE DISPOSAL SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 26**

SYSTEM REVENUE REQUIREMENTS		\$ 4,690,650
REVENUES FROM CURRENT RATES		
MONTHLY METER CHARGE		
7,614 meter equivalents	x \$ 24.35	
	x 12 =	\$ 2,224,811
MONTHLY BILLING CHARGE		
5,745 meters	x \$ 3.75	
	x 12 =	258,525
COMMODITY CHARGE		
855,545 units (100 CF)	x \$ 2.50	
	=	<u>2,138,863</u>
		<u>(4,622,199)</u>
REQUIRED REVENUE INCREASE (DECREASE)		<u>\$ 68,451</u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES		<u>1.48%</u>



**CITY OF KENTWOOD, MICHIGAN**  
**SEWER RATE STUDY**  
**SEWAGE DISPOSAL SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 26**

SYSTEM REVENUE REQUIREMENTS		\$	4,284,334
REVENUES FROM CURRENT RATES			
MONTHLY METER CHARGE			
8,116 meter equivalents	x	\$ 3.84	x 12 = \$ 373,985
MONTHLY BILLING CHARGE			
4,703 meters	x	\$ 3.75	x 12 = 211,635
COMMODITY CHARGE			
1,397,738 units (100 CF)	x	\$ 2.54	= <u>3,550,255</u>
			<u>(4,135,875)</u>
REQUIRED REVENUE INCREASE (DECREASE)		\$	<u>148,459</u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES			<u>3.59%</u>
REFLECTS CAPITAL INVESTMENT REIMBURSEMENT, IN THE AMOUNT OF		\$	107,854



**CASCADE TOWNSHIP**  
**SEWER RATE STUDY**  
**SEWAGE DISPOSAL SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 26**

SYSTEM REVENUE REQUIREMENTS \$ 2,479,068

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE

3,298 meter equivalents x \$ 28.02 x 12 = \$ 1,108,920

MONTHLY BILLING CHARGE

1,988 meters x \$ 3.75 x 12 = 89,460

COMMODITY CHARGE

470,262 units (100 CF) x \$ 2.60 = 1,222,681 (2,421,061)

REQUIRED REVENUE INCREASE (DECREASE) \$ 58,007

PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES 2.40%

**CASCADE TOWNSHIP**  
**SEWER RATE STUDY**  
**SEWAGE DISPOSAL SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 27**

COMMODITY CHARGE:

PRESENT CHARGE x RATE ADJUSTMENT \$ 2.66 /100 CF \*  
 \$ 2.60 x 102.40%

MONTHLY SERVICE CHARGE:

SYSTEM REVENUE REQUIREMENTS	\$ 2,479,068
NEW COMMODITY CHARGE	
470,262 x \$ 2.66	\$ 1,250,897
NEW MONTHLY BILLING CHARGE	
1,988 x \$ 3.57 x 12	<u>85,166</u>
	<u>(1,336,063)</u>
	<u>\$ 1,143,005</u>

MONTHLY METER CHARGE =  $\frac{\$1,143,005}{3,298 \times 12} = \underline{\underline{\$ 28.88}}$  MONTHLY

METER SIZE	EQUIVALENT	MONTHLY SERVICE CHARGE			PRESENT
		METER	BILLING	TOTAL	
3/4" or less	1.0000	\$ 28.88	\$ 3.57	\$ 32.45	\$ 31.77
1"	1.7778	51.34	3.57	54.91	53.56
1 1/4"	2.7778	80.22	3.57	83.79	81.58
1 1/2"	4.0000	115.52	3.57	119.09	115.83
2"	7.1111	205.37	3.57	208.94	203.00
3"	16.0000	462.08	3.57	465.65	452.07
4"	28.4444	821.47	3.57	825.04	800.76
6" and over	64.0000	1,848.32	3.57	1,851.89	1,797.03

\* NEW RATES EFFECTIVE, ON A PRO-RATA BASIS, JANUARY 1, 2019

**GRAND RAPIDS TOWNSHIP**  
**SEWER RATE STUDY**  
**SEWAGE DISPOSAL SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 26**

SYSTEM REVENUE REQUIREMENTS \* \$ 2,523,774

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE

4,927 meter equivalents x \$ 23.33 x 12 = \$ 1,379,363

MONTHLY BILLING CHARGE

3,788 meters x \$ 3.75 x 12 = 170,460

COMMODITY CHARGE

384,714 units (100 CF) x \$ 2.30 = 884,842 (2,434,665)

REQUIRED REVENUE INCREASE (DECREASE) \$ 89,109

PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES 3.66%

\* REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 53,684



**TALLMADGE TOWNSHIP**  
**SEWER RATE STUDY**  
**SEWAGE DISPOSAL SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 26**

SYSTEM REVENUE REQUIREMENTS \$ 437,541

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE			
440 meter equivalents	x	\$ 27.99	x 12 = \$ 147,787
MONTHLY BILLING CHARGE			
231 meters	x	\$ 3.75	x 12 = 10,395
COMMODITY CHARGE			
28,383 units (100 CF)	x	\$ 9.93	= <u>281,843</u>
			<u>(440,025)</u>

REQUIRED REVENUE INCREASE (DECREASE) \$ (2,484)

PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES -0.56%



**WRIGHT TOWNSHIP**  
**SEWER RATE STUDY**  
**SEWAGE DISPOSAL SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 26**

SYSTEM REVENUE REQUIREMENTS \$ 282,381

REVENUES FROM CURRENT RATES

REU CHARGE

422.500 meter equivalents x \$ 53.73 x 12 = \$ 272,411

MONTHLY METER CHARGE

422.500 meter equivalents x \$ - x 12 = -

MONTHLY BILLING CHARGE

231 meters x \$ - x 12 = -

COMMODITY CHARGE

25,265 units (100 CF) x \$ - = - (272,411)

REQUIRED REVENUE INCREASE (DECREASE) \$ 9,970

PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES 3.66%

\* REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 26,025

**WRIGHT TOWNSHIP**  
**SEWER RATE STUDY**  
**SEWAGE DISPOSAL SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 27**

**MONTHLY REU CHARGE:**

$$\frac{\text{SYSTEM REVENUE REQUIREMENTS **}}{\text{TOTAL REU'S * 12 MONTHS}} = \frac{\$282,381}{422.500 \times 12} = \$ \underline{\underline{55.70}} \quad \text{MONTHLY REU CHARGE *}$$

**EXAMPLES OF APPROXIMATE MONTHLY CHARGE BY NUMBER OF REU:**

<u>NUMBER OF REU</u>	<u>AMOUNT</u>	<u>NUMBER OF REU</u>	<u>AMOUNT</u>	<u>NUMBER OF REU</u>	<u>AMOUNT</u>
1.0000	\$ 55.70	7.5000	\$ 417.75	19.0000	\$ 1,058.30
1.5000	83.55	8.0000	445.60	20.0000	1,114.00
2.0000	111.40	8.5000	473.45	25.0000	1,392.50
2.5000	139.25	9.0000	501.30	30.0000	1,671.00
3.0000	167.10	9.5000	529.15	35.0000	1,949.50
3.5000	194.95	10.0000	557.00	40.0000	2,228.00
4.0000	222.80	11.0000	612.70	50.0000	2,785.00
4.4000	245.08	12.0000	668.40	60.0000	3,342.00
4.5000	250.65	13.0000	724.10	70.0000	3,899.00
5.0000	278.50	14.0000	779.80	80.0000	4,456.00
5.5000	306.35	15.0000	835.50	90.0000	5,013.00
6.0000	334.20	16.0000	891.20	100.0000	5,570.00
6.5000	362.05	17.0000	946.90	150.0000	8,355.00
7.0000	389.90	18.0000	1,002.60	200.0000	11,140.00

\*NEW RATES EFFECTIVE ON JANUARY 1, 2019

\*\*REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 26,025

**CITY OF EAST GRAND RAPIDS, MICHIGAN**

**SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
RATE ANALYSIS - TASK NO. 26**

INTEGRATED SYSTEM REVENUE REQUIREMENTS				\$	728,343
COMMODITY CHARGE					
	395.862 units	x	\$ 1,834.00		726,011
					<hr/>
REQUIRED COMMODITY REVENUE INCREASE (DECREASE)				\$	<u>2,332</u>
NON-INTEGRATED SYSTEM REVENUE REQUIREMENTS				\$	26,959
MONTHLY SERVICE CHARGE					
	\$2,198	x	12 MONTHS		26,376
					<hr/>
REQUIRED SERVICE REVENUE INCREASE (DECREASE)				\$	<u>583</u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES					<u>0.39%</u>

**CITY OF EAST GRAND RAPIDS, MICHIGAN**

**SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
RATE ANALYSIS - TASK NO. 27**

SYSTEM REVENUE REQUIREMENTS	\$ 755,302
NEW COMMODITY CHARGE *	
395.862 x \$ 1,840.00 =	(728,386)
	<hr/>
	<u>\$ 26,916</u>

MONTHLY SERVICE CHARGE \* = \$ 26,916 / 12 = \$2,243

\* NEW RATES EFFECTIVE ON JANUARY 1, 2019

**CALEDONIA TOWNSHIP**  
**SEWER RATE STUDY**  
**SEWAGE DISPOSAL SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 26**

INTEGRATED SYSTEM REVENUE REQUIREMENTS		\$ 133,758
COMMODITY CHARGE		
29.741 units	x	\$ 4,587.00
		136,422
		136,422
REQUIRED COMMODITY REVENUE INCREASE (DECREASE)		<u><u>\$ (2,664)</u></u>
NON-INTEGRATED SYSTEM REVENUE REQUIREMENTS		\$ 9,012
MONTHLY SERVICE CHARGE		
\$719	x	12 MONTHS
		8,628
		8,628
REQUIRED SERVICE REVENUE INCREASE (DECREASE)		<u><u>\$ 384</u></u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES		<u><u>-1.57%</u></u>

**CALEDONIA TOWNSHIP**  
**SEWER RATE STUDY**  
**SEWAGE DISPOSAL SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 27**

SYSTEM REVENUE REQUIREMENTS	\$ 142,770
NEW COMMODITY CHARGE *	
29.741 x \$ 4,497.00 =	(133,745)
	<hr/>
	<u>\$ 9,025</u>

MONTHLY SERVICE CHARGE \* = \$ 9,025 / 12 = \$752

\* NEW RATES EFFECTIVE ON JANUARY 1, 2019

**ADA TOWNSHIP**  
**SEWER RATE STUDY**  
**SEWAGE DISPOSAL SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 26**

INTEGRATED SYSTEM REVENUE REQUIREMENTS		\$ 732,386
COMMODITY CHARGE		
310.576 units	x	\$ 2,288.00
		710,598
		<hr/>
REQUIRED COMMODITY REVENUE INCREASE (DECREASE)		<u>\$ 21,788</u>
NON-INTEGRATED SYSTEM REVENUE REQUIREMENTS		\$ 552,048
MONTHLY SERVICE CHARGE		
\$45,942	x	12 MONTHS
		551,304
		<hr/>
REQUIRED SERVICE REVENUE INCREASE (DECREASE)		<u>\$ 744</u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES		<u>1.79%</u>

**ADA TOWNSHIP**  
**SEWER RATE STUDY**  
**SEWAGE DISPOSAL SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 27**

SYSTEM REVENUE REQUIREMENTS	\$ 1,284,434
NEW COMMODITY CHARGE *	
310.576 x \$ 2,358.00 =	(732,338)
	<hr/>
	<u>\$ 552,096</u>

MONTHLY SERVICE CHARGE \* = \$552,096 / 12 = \$46,008

\* NEW RATES EFFECTIVE ON JANUARY 1, 2019

**GAINES TOWNSHIP**  
**SEWER RATE STUDY**  
**SEWAGE DISPOSAL SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 26**

INTEGRATED SYSTEM REVENUE REQUIREMENTS		\$ 189,353
COMMODITY CHARGE		
113.527 units    x    \$ 1,549.00		175,853
		175,853
REQUIRED COMMODITY REVENUE INCREASE (DECREASE)		\$ 13,500
NON-INTEGRATED SYSTEM REVENUE REQUIREMENTS		\$ 19,267
MONTHLY SERVICE CHARGE		
\$1,488            x        12 MONTHS		17,856
		17,856
REQUIRED SERVICE REVENUE INCREASE (DECREASE)		\$ 1,411
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES		7.70%

**GAINES TOWNSHIP**  
**SEWER RATE STUDY**  
**SEWAGE DISPOSAL SYSTEM FUND**  
**RATE ANALYSIS - TASK NO. 27**

SYSTEM REVENUE REQUIREMENTS	\$ 208,620
NEW COMMODITY CHARGE *	
113.527 x \$ 1,668.00 =	(189,363)
	<hr/>
	<u>\$ 19,257</u>

MONTHLY SERVICE CHARGE \* = \$ 19,257 / 12 = \$1,605

\* NEW RATES EFFECTIVE ON JANUARY 1, 2019

SEWER RATE STUDY  
 SEWAGE DISPOSAL SYSTEM FUND  
 RE-EVALUATE FRONT FOOT CHARGES  
 TASK NO. 28

The City Engineer's Office has reviewed recent construction costs for sanitary sewer facilities and recommends the following front foot assessment rates:

Sewer User Type	Definition	2018 Rate	2019 Rate	% Change
Domestic	Property is domicile for single or multiple family use, such as homes, apartments, duplexes, condominium, etc.	\$ 102.00	\$ 105.00	2.94%
Commercial - Industrial	Property used to offer services and / or products, such as retail/wholesale stores, gas stations, restaurants, hotels, schools, churches, etc., and manufacturing or processing facilities (industrial).	\$ 107.00	\$ 135.00	26.17%

SEWER RATE STUDY  
 SEWAGE DISPOSAL SYSTEM FUND  
 EVALUATE SEWER LATERAL CHARGES  
 TASK NO. 29

The City Engineer’s Office has evaluated the recent costs for a six inch (6”) sanitary sewer lateral and recommends the following sanitary sewer lateral charges:

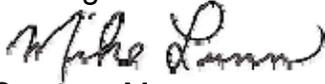
R.O.W. Width	Year	Lateral Charge	% Change
50 feet	2018	\$2,700	3.70%
	2019	\$2,800	
60 feet	2018	\$3,200	3.13%
	2019	\$3,300	
66 feet	2018	\$3,500	2.86%
	2019	\$3,600	
80 feet	2018	\$4,200	2.38%
	2019	\$4,300	
100 feet	2018	\$5,100	3.92%
	2019	\$5,300	

# MEMORANDUM

CITY OF GRAND RAPIDS

**Date:** October 16, 2018

**To:** Molly Eastman  
Fiscal Services Manager

**From:** Michael Lunn   
Environmental Services Manager

**Subject:** Sewer Rate Study – Task #30 - Surcharges

The Water Resource Recovery Facility (WRRF) has a limited amount of capacity which is typically allocated to industries having discharges exceeding ordinance limits. These industries are charged for utilizing this remaining plant capacity in four categories of conventional pollutants. These pollutants are: 1) Biochemical Oxygen Demand (BOD); 2) Total Suspended Solids (TSS); 3) Total Phosphorus (Phos); 4) and Ammonia Nitrogen (NH<sub>3</sub>). This benefits the industries in that it reduces their pretreatment requirements and benefits the system by utilizing available system capacity.

As shown on the attached sheets, the surcharge methodology includes evaluating various cost centers at the Water Resource Recovery Facility and allocating costs based on unit process operating cost. Cumulative costs can then be allocated to the four conventional pollutant categories identified above to determine appropriate surcharge rates.

The WRRF also accepts domestic septage portable toilet waste and concentrated waste on site. The following fees covers costs associated with permit administration, receiving facility operation and maintenance, analytical testing, treatment and disposal of the waste.

#### Septage Portable Toilet Waste

- \$500 annual discharge authorization permit fee.
- \$100 per 1,000 gallons discharged.

#### Concentrated Waste

- \$1,000 annual discharge authorization permit fee for Permitted Significant Industrial Users within the service area.
- \$2,000 annual discharge authorization permit fee for customers outside the service area.
- \$1,000 each for waste stream characterization and compatibility evaluation.
- \$45 per 1,000 gallons discharged for customers within the service area.
- \$60 per 1,000 gallons discharged for customers outside the service area.

**Memorandum**

**Date: October 16, 2018**

**Subject: Sewer Rate Study – Task #30 - Surcharges**

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Pumped or Hauled Municipal EQ Biosolids

- \$1,500 annual discharge authorization permit fee
- \$1,000 each for Biosolids characterization and compatibility evaluation.
- \$80 per dry ton discharged for customers within the service area.
- \$100 per dry ton discharged for customers outside the service area.

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**City of Grand Rapids Michigan**  
**Sewage Disposal System Fund**  
**Evaluation of Wastewater Surcharges for Industrial Customers- BOD, TSS, Phos, NH3 & NH3**  
**TASK NO. 30- Part 1**

Description	Rate Study Year		Wastewater Surcharges					
	2018	2019	Volume	BOD	TSS	Phos	NH3	Industrial
Operation & Maintenance (See Part 2)	\$ 29,088,407	\$ 4,484,758	\$ 4,796,432	\$ 5,882,951	\$ 955,141	\$ 506,350	\$ 578,264	\$ 11,884,511
Depreciation (See Part 3)	7,289,152	812,367	996,381	161,769	85,770	4,473,322	-	4,473,322
Return on System Investment (See Part 3)	13,386,284	738,521	789,884	968,806	157,292	83,396	-	10,648,385
<b>Total</b>	<b>\$ 49,763,843</b>	<b>\$ 5,982,822</b>	<b>\$ 6,398,683</b>	<b>\$ 7,848,138</b>	<b>\$ 1,274,202</b>	<b>\$ 675,516</b>	<b>\$ 578,264</b>	<b>\$ 27,006,218</b>

**Recommended Surcharge Rate - 2019**

**\$ 0.278      \$ 0.466      \$ 2.449      \$ 0.264**

**Actual Surcharge Rate - 2018**

**\$ 0.261      \$ 0.445      \$ 2.674      \$ 0.248**

**Change in Surcharge Rate - Amount- 2018 to 2019**

**\$ 0.017      \$ 0.021      \$ (0.225)      \$ 0.016**

**Change in Surcharge Rate - Percent- 2018 to 2019**

**6.51%      4.72%      -8.41%      6.45%**

Loadings - lb/day (Per Lunn) \*      **1,425**      **7,016**  
 Loadings - lb/year      23,017,387      16,857,647      520,247      2,560,718

\* Loadings are the average of the last three years.

Task No. 30 - Part 2

City of Grand Rapids Michigan  
 Sewage Disposal System Fund  
 Evaluation of High Strength Surcharges- BOD, TSS, Phos & NH3  
 Allocation of Operation & Maintenance Expense & Determination of WWTP Allocation Factors

	Primary Allocation		Allocation Basis	Line No. Ref.	Volume	Component Allocation (3)							
	Base Year- 2018	Calendar Year- 2019				BOD	TSS	Phos	NH3	Industrial	Other		
Wastewater Treatment Plant													
Pre-Treatment	985,280	\$ 1,195,555	WWTP	(1)	\$ 1,195,555	-	-	-	-	-	-	-	-
Primary Treatment	1,442,521	1,750,379	WWTP	(2)	-	1,050,227	-	-	-	-	-	-	-
Secondary Treatment	2,648,707	3,213,985	WWTP	(3)	803,496	482,098	482,098	-	-	-	-	-	-
Disinfection/Dechlorination	1,096,256	1,330,215	WWTP	(4)	1,330,215	-	-	-	-	-	-	-	-
Phosphorus Removal	498,477	604,860	WWTP	(5)	302,430	-	302,430	-	-	-	-	-	-
Residue Handling/Disposal	7,030,263	8,530,639	WWTP	(6)	853,063	4,350,626	170,613	170,613	-	-	-	-	-
	\$ 13,707,504	\$ 16,625,633			\$ 4,484,759	\$ 5,882,951	\$ 955,141	\$ 506,350	\$ -	\$ -	\$ -	\$ -	\$ -
Lift Stations													
Interceptor		303,116	Collection	(11)	-	-	-	-	-	-	-	-	303,116
Trunk		130,100	Collection	(11)	-	-	-	-	-	-	-	-	130,100
Local Collector		624,057	Collection	(11)	-	-	-	-	-	-	-	-	624,057
Sewer Lines													
Interceptor		290,667	Collection	(11)	-	-	-	-	-	-	-	-	290,667
Trunk		646,018	Collection	(11)	-	-	-	-	-	-	-	-	646,018
Local Collector		4,596,664	Collection	(11)	(0)	-	-	-	-	-	-	-	4,596,664
Bulk Meter Stations		4,179	Collection	(7)	-	-	-	-	-	-	-	-	4,179
Customer Accounting		3,160,942	Admin	(8)	(0)	-	-	-	-	-	-	-	3,160,942
Industrial Pretreatment		578,264	Industry	(9)	-	-	-	-	-	-	-	578,264	-
Subtotal		\$ 26,959,639			\$ 4,484,758	\$ 5,882,951	\$ 955,141	\$ 506,350	\$ 9,755,743	\$ 578,264	\$ 578,264	\$ 2,128,768	
Admin		2,128,768	Admin	(10)	0	-	-	-	-	-	-	-	2,128,768
Total		\$ 29,088,407			\$ 4,484,758	\$ 5,882,951	\$ 955,141	\$ 506,350	\$ 11,884,511	\$ 578,264	\$ 578,264	\$ 11,884,511	
<b>WWTP Allocation Factors</b>		<b>100.000%</b>			<b>26.974%</b>	<b>35.385%</b>	<b>5.745%</b>	<b>3.046%</b>	<b>0.000%</b>	<b>0.000%</b>	<b>0.000%</b>	<b>0.000%</b>	<b>0.000%</b>

(1) Per M.Lunn 1092018

(2) Primary Allocation of Current Year for Calendar 2019, based on 2018 Base Year.

(3) - (11) Refer to Task 30- Part 4 as noted.

**Task No. 30 - Part 3**

**City of Grand Rapids Michigan  
Sewage Disposal System Fund  
Evaluation of High Strength Surcharges- BOD, TSS, Phos & NH3  
Allocation of Depreciation Expense & Return on System Investment**

**Depreciation Expense- Task 24**

Description	Amount	Volume	Wastewater Surcharges				Industrial	Other
			BOD	TSS	Phos	NH3		
Integrated System (1)	\$ 2,815,830	\$ 759,543	\$ 812,367	\$ 996,381	\$ 161,769	\$ 85,770	\$ -	
Other	4,473,322	-	-	-	-	-	4,473,322	
<b>Total</b>	<b>\$ 7,289,152</b>	<b>\$ 759,543</b>	<b>\$ 812,367</b>	<b>\$ 996,381</b>	<b>\$ 161,769</b>	<b>\$ 85,770</b>	<b>\$ 4,473,322</b>	

**Return on System Investment- Task 21**

Description	Amount	Volume	Wastewater Surcharges				Industrial	Other
			BOD	TSS	Phos	NH3		
Integrated System (1)	\$ 2,737,899	\$ 738,521	\$ 789,884	\$ 968,806	\$ 157,292	\$ 83,396	\$ -	
Other	10,648,385	-	-	-	-	-	10,648,385	
<b>Total</b>	<b>\$ 13,386,284</b>	<b>\$ 738,521</b>	<b>\$ 789,884</b>	<b>\$ 968,806</b>	<b>\$ 157,292</b>	<b>\$ 83,396</b>	<b>\$ 10,648,385</b>	

**(1) Allocated on WWTP Allocation Factors \***

**26.9740%**      **28.8500%**      **35.3850%**      **5.7450%**      **3.0460%**

**\* Refer to Task No. 30 - Part 2**

Task No. 30 - Part 4

City of Grand Rapids Michigan  
 Sewage Disposal System Fund  
 Evaluation of High Strength Surcharges- BOD, TSS, Phos & NH3  
 Functional Cost Allocation Factors

Line No. Ref.	Cost Function	Total %	Allocation Basis	Volume %	Wastewater Surcharges					Industrial %	Other %
					BOD %	TSS %	Phos %	NH3 %			
(1)	Pre-Treatment	100.000%	WWTP	100.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
(2)	Primary Treatment	100.000%	WWTP	0.000%	30.000%	60.000%	0.000%	10.000%	0.000%	0.000%	0.000%
(3)	Secondary Treatment	100.000%	WWTP	25.000%	40.000%	15.000%	15.000%	5.000%	0.000%	0.000%	0.000%
(4)	Disinfection/Dechlorination	100.000%	WWTP	100.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
(5)	Phosphorus Removal	100.000%	WWTP	50.000%	0.000%	0.000%	50.000%	0.000%	0.000%	0.000%	0.000%
(6)	Residue Handling/Disposal	100.000%	WWTP	10.000%	35.000%	51.000%	2.000%	2.000%	0.000%	0.000%	0.000%
(7)	Bulk Metering Stations	100.000%	Collection	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	100.000%	0.000%
(8)	Customer Accounting	100.000%	Admin	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	100.000%	0.000%
(9)	Industrial Pretreatment	100.000%	Industry	0.000%	0.000%	0.000%	0.000%	0.000%	100.000%	0.000%	0.000%
(10)	Admin	100.000%	Admin	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	100.000%	0.000%
(11)	Collection System	100.000%	Collection	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	100.000%

(a) With the exception of phosphorus removal, foregoing based on "Final Allocation Table" in August 1, 2003 memo from Randall Fisher & Mike Lunn to Eric DeLong regarding 2001 Surcharge Rate Evaluation. Evaluation by WWTP staff for 2013 RS Review concluded percentages for phosphorus removal shall remain allocated 50/50 to the categories above, as initially recommended in the 2006 RS Review, to recommend 2018 rate adjustments.

**City of Grand Rapids Michigan  
Sewage Disposal System Fund  
Concentrated Waste Surcharge Adjustment  
TASK NO. 30A**

Description	Operational Costs			Surcharge Adjustment		
	BOD	Phos	NH3	BOD	Phos	NH3
Operation & Maintenance (1)(2)	\$ 1,330,215	\$ 955,141	\$ 506,350	\$ 95,929	\$ 19,103	\$ 10,127
Disinfection/Dechlorination (1)(3)	\$ 912,727	\$ 3,380	\$ 414,108	\$ 18,255	\$ 68	\$ 8,282
<b>Total</b>	<b>\$ 5,709,159</b>	<b>\$ 958,521</b>	<b>\$ 920,458</b>	<b>\$ 114,183</b>	<b>\$ 19,170</b>	<b>\$ 18,409</b>
<b>Proposed Concentrated Waste Adjustment</b>				<b>\$ 0.116</b>	<b>\$ 5.252</b>	<b>\$ 0.041</b>
<b>Recommended Surcharge Rate - 2019</b>				<b>\$ 0.278</b>	<b>\$ 2.449</b>	<b>\$ 0.264</b>
<b>Surcharge with Adjustment</b>				<b>\$ 0.162</b>	<b>\$ -</b>	<b>\$ 0.223</b>

Concentrated Waste Loadings - lb/day	<b>2,700</b>	<b>10</b>	<b>1,225</b>
Concentrated Waste Loadings - lb/year	985,500	3,650	447,125

(1) Surcharge Adjustment:  
 Surcharge Adjustment = (Base Year Peaking Factor - Current Year Peaking Factor)\*(1 - Fixed Costs)  
 Base Year Peaking Factor 1.33  
 Current Year Peaking Factor Adjustment 1.28  
 Fixed Cost 60%  
 Concentrated Waste Adjustment Factor 2.0%

(2) Operations & Maintenance cost is from Task 30 - Part 2, Total amount of BOD, Phos, & NH3. This is allocated based on the Surcharge Adjustment Factor - see footnote 1.  
 (3) Disinfection cost is from Task 30 - Part 2, 2016 allocation for WWTP. This is allocated based on the Surcharge Adjustment Factor - see footnote 1.

**CITY OF GRAND RAPIDS, MICHIGAN**  
**SEWER RATE STUDY**  
**IPP PERMIT FEE STRUCTURE – TASK NO. 31**

The City of Grand Rapids Industrial Pretreatment Program (IPP) Permit fee structure is based on the actual cost of administration and implementation. Administration includes all the costs associated with document generation and handling as well as one annual site visit. The implementation costs include all sampling and associated laboratory analyses required by the permit. These two fees are identified on permit documents as a Permit Fee and an Analytical Fee.

**Permit Fee:** This fee is based on the actual costs associated with administering the permit program, including time spent on permit required inspections, clerical requirements, data handling requirements and all trunkline monitoring. This fee will be specific to the costs associated with the permit category.

**Analytical Fee:** This fee is based on actual costs associated with each permit. The costs, and an explanation of how they are determined, are outlined in an accompanying attachment. Labor time, including sampling and sample delivery to our laboratory, was derived from experience:

Composite samples:	1.5 hours each
Grab samples:	1.0 hours each

Four examples of analytical fees are attached herewith.

**City of Grand Rapids**  
**Cost of Services Provided by IPP**

**Last Update:** 10/16/2018

**Permit Fee:** \$ 400.00

**IPP Costs:**

**Labor:** \$ 64.34 per hour  
**Vehicle:** \$ 4.28 per hour  
**Sampler:** \$ 35.00 per day

**IPP Accounting:**

**Composite Labor:** 1.5 hours per sample  
**Grab Sample Labor:** 1.0 hours per sample

**Laboratory Costs:**

metals	\$	7.00	ea.
TSS	\$	7.00	ea.
BOD	\$	14.00	ea.
total phosphorus	\$	13.50	ea.
pH	\$	8.00	ea.
EPA 624	\$	60.00	ea.
EPA 625	\$	115.00	ea.
BTEX/MTBE	\$	35.00	ea.
sulfide	\$	12.00	ea.
oil & grease	\$	25.00	ea.
total cyanide	\$	15.00	ea.
hex chrome	\$	10.00	ea.
fecal coliform	\$	30.00	ea.
Ammonia (NH3-N)	\$	9.00	ea.
Mercury (EPA 245.1 or 245.2)	\$	15.00	ea.
PFAS EPA 537 Modified (sample, duplicate and blank)	\$	900.00	ea.

**Explanation of Costs:**

**Labor:** Labor is the hourly pay rate of a Water Pollution Control Inspector (classification 21A @ "F" step = to \$32.1709 x 2) per the latest agreement between the City of Grand Rapids and the Grand Rapids Employees Independent Union plus 100% as specified in section 2.81(1) of the City of Grand Rapids Sewage Disposal System Ordinance. If personnel in a different classification are required, time will be billed based on that classification's pay scale plus 100%.

**Vehicle:** Hourly rate is the actual cost charged to City departments for vehicle use plus 25% for overhead.

**Sampler:** Sampler costs are based on the most recently approved competitive bid obtained for contract work provided to the

**Analysis:** Laboratory costs are based on the most recently approved competitive bid obtained for contract work provided to the Grand Rapids Wastewater Treatment Plant's Laboratory.

Permit No: Example 1

Company: Typical Metal Finisher 4 day sampling  
Facility Address:  
City, State, Zip

Permit Fee: \$ 400.00  
Analytical Fee: \$ 839.72  
Amount Due: \$ 1,239.72

<b>Composite Samples:</b>	<b>4</b>				
<b>IPP Requirements:</b>	man hours = <b>6.0</b>	x \$ 64.34	= \$ <b>386.04</b>		
	sampler days = <b>4.0</b>	x \$ 35.00	= \$ <b>140.00</b>		
	vehicle hours = <b>6.0</b>	x \$ 4.28	= \$ <b>25.68</b>		
		<b>Total IPP Composite Costs:</b>		<b>\$ 551.72</b>	
<b>Laboratory Analysis:</b> (each composite)	metals <b>7</b>	x \$ 7.00	= \$ <b>49.00</b>		
	TSS	x \$ 7.00	= \$ -		
	BOD	x \$ 14.00	= \$ -		
	total phosphate	x \$ 13.50	= \$ -		
	pH	x \$ 8.00	= \$ -		
	EPA 625	x \$ 115.00	= \$ -		
	sulfide	x \$ 12.00	= \$ -		
	oil & grease	x \$ 25.00	= \$ -		
	hex chrome	x \$ 10.00	= \$ -		
	fecal coliform	x \$ 30.00	= \$ -		
	other	x	= \$ -		
		<b>total per composite:</b>		<b>\$ 49.00</b>	
		<b>Total Laboratory Composite Costs:</b>		<b>\$ 196.00</b>	
		<b>Total Composite Sample Costs:</b>		<b>\$ 747.72</b>	
<b>Grab Samples:</b>	<b>4</b>				
<b>IPP Requirements:</b>	man hours = <b>0.0</b>	x \$ 64.34	= \$ -		
	vehicle hours = <b>0.0</b>	x \$ 4.28	= \$ -		
		<b>Total IPP Grab Costs:</b>		<b>\$ -</b>	
<b>Laboratory Analysis:</b> (each grab)	metals	x \$ 7.00	= \$ -		
	TSS	x \$ 7.00	= \$ -		
	BOD	x \$ 14.00	= \$ -		
	total phosphate	x \$ 13.50	= \$ -		
	pH <b>1</b>	x \$ 8.00	= \$ <b>8.00</b>		
	EPA 624	x \$ 60.00	= \$ -		
	EPA 625	x \$ 115.00	= \$ -		
	BTEX/MTBE	x \$ 35.00	= \$ -		
	sulfide	x \$ 12.00	= \$ -		
	oil & grease	x \$ 25.00	= \$ -		
	total cyanide <b>1</b>	x \$ 15.00	= \$ <b>15.00</b>		
	hex chrome	x \$ 10.00	= \$ -		
	fecal coliform	x \$ 30.00	= \$ -		
	other	x	= \$ -		
		<b>total per grab:</b>		<b>\$ 23.00</b>	
		<b>Total Laboratory Grab Costs:</b>		<b>\$ 92.00</b>	
		<b>Total Grab Sample Costs:</b>		<b>\$ 92.00</b>	
		<b>Total Analytical Permit Costs:</b>		<b>\$ 839.72</b>	

Permit No: Example 2

Company: Litho Process

Facility Address:  
City, State, Zip

Permit Fee: \$ 400.00  
Analytical Fee: \$ 76.62  
Amount Due: \$ 476.62

**Composite Samples:**

**IPP Requirements:** man hours = 0.0 x \$ 64.34 = \$ -  
sampler days = 0.0 x \$ 35.00 = \$ -  
vehicle hours = 0.0 x \$ 4.28 = \$ -

**Total IPP Composite Costs: \$ -**

**Laboratory Analysis:** (each composite)  
metals x \$ 7.00 = \$ -  
TSS x \$ 7.00 = \$ -  
BOD x \$ 14.00 = \$ -  
total phosphate x \$ 13.50 = \$ -  
pH x \$ 8.00 = \$ -  
EPA 625 x \$ 115.00 = \$ -  
sulfide x \$ 12.00 = \$ -  
oil & grease x \$ 25.00 = \$ -  
hex chrome x \$ 10.00 = \$ -  
fecal coliform x \$ 30.00 = \$ -  
other x = \$ -

**total per composite: \$ -**

**Total Laboratory Composite Costs: \$ -**

**Total Composite Sample Costs: \$ -**

**Grab Samples: 1**

**IPP Requirements:** man hours = 1.0 x \$ 64.34 = \$ 64.34  
vehicle hours = 1.0 x \$ 4.28 = \$ 4.28

**Total IPP Grab Costs: \$ 68.62**

**Laboratory Analysis:** (each grab)  
metals x \$ 7.00 = \$ -  
TSS x \$ 7.00 = \$ -  
BOD x \$ 14.00 = \$ -  
total phosphate x \$ 13.50 = \$ -  
pH 1 x \$ 8.00 = \$ 8.00  
EPA 624 x \$ 60.00 = \$ -  
EPA 625 x \$ 115.00 = \$ -  
BTEX/MTBE x \$ 35.00 = \$ -  
sulfide x \$ 12.00 = \$ -  
oil & grease x \$ 25.00 = \$ -  
total cyanide x \$ 15.00 = \$ -  
hex chrome x \$ 10.00 = \$ -  
fecal coliform x \$ 30.00 = \$ -  
other x = \$ -

**total per grab: \$ 8.00**

**Total Laboratory Grab Costs: \$ 8.00**

**Total Grab Sample Costs: \$ 76.62**

**Total Analytical Permit Costs: \$ 76.62**

Permit No: Example 3

Company: Stripping Process

Facility Address:  
City, State, Zip

Permit Fee: \$ 400.00  
Analytical Fee: \$ 111.62  
Amount Due: \$ 511.62

**Composite Samples:**

**IPP Requirements:** man hours = 0.0 x \$ 64.34 = \$ -  
sampler days = 0.0 x \$ 35.00 = \$ -  
vehicle hours = 0.0 x \$ 4.28 = \$ -

**Total IPP Composite Costs:** \$ -

**Laboratory Analysis:** (each composite)  
metals x \$ 7.00 = \$ -  
TSS x \$ 7.00 = \$ -  
BOD x \$ 14.00 = \$ -  
total phosphate x \$ 13.50 = \$ -  
pH x \$ 8.00 = \$ -  
EPA 625 x \$ 115.00 = \$ -  
sulfide x \$ 12.00 = \$ -  
oil & grease x \$ 25.00 = \$ -  
hex chrome x \$ 10.00 = \$ -  
fecal coliform x \$ 30.00 = \$ -  
other x = \$ -

**total per composite:** \$ -

**Total Laboratory Composite Costs:** \$ -

**Total Composite Sample Costs:** \$ -

**Grab Samples:** 1

**IPP Requirements:** man hours = 1.0 x \$ 64.34 = \$ 64.34  
vehicle hours = 1.0 x \$ 4.28 = \$ 4.28

**Total IPP Grab Costs:** \$ 68.62

**Laboratory Analysis:** (each grab)  
metals 5 x \$ 7.00 = \$ 35.00  
TSS x \$ 7.00 = \$ -  
BOD x \$ 14.00 = \$ -  
total phosphate x \$ 13.50 = \$ -  
pH 1 x \$ 8.00 = \$ 8.00  
EPA 624 x \$ 60.00 = \$ -  
EPA 625 x \$ 115.00 = \$ -  
BTEX/MTBE x \$ 35.00 = \$ -  
sulfide x \$ 12.00 = \$ -  
oil & grease x \$ 25.00 = \$ -  
total cyanide x \$ 15.00 = \$ -  
hex chrome x \$ 10.00 = \$ -  
fecal coliform x \$ 30.00 = \$ -  
other x = \$ -

**total per grab:** \$ 43.00

**Total Laboratory Grab Costs:** \$ 43.00

**Total Grab Sample Costs:** \$ 111.62

**Total Analytical Permit Costs:** \$ 111.62

Permit No: Example 4

Company: Silver User - photoprocessor  
Facility Address:  
City, State, Zip

Permit Fee: \$ 400.00  
Analytical Fee: \$ 226.86  
Amount Due: \$ 626.86

**Composite Samples:**

**IPP Requirements:** man hours = 0.0 x \$ 64.34 = \$ -  
sampler days = 0.0 x \$ 35.00 = \$ -  
vehicle hours = 0.0 x \$ 4.28 = \$ -

**Total IPP Composite Costs: \$ -**

**Laboratory Analysis:** (each composite)  
metals x \$ 7.00 = \$ -  
TSS x \$ 7.00 = \$ -  
BOD x \$ 14.00 = \$ -  
total phosphate x \$ 13.50 = \$ -  
pH x \$ 8.00 = \$ -  
EPA 625 x \$ 115.00 = \$ -  
sulfide x \$ 12.00 = \$ -  
oil & grease x \$ 25.00 = \$ -  
hex chrome x \$ 10.00 = \$ -  
fecal coliform x \$ 30.00 = \$ -  
other x = \$ -

**total per composite: \$ -**

**Total Laboratory Composite Costs: \$ -**

**Total Composite Sample Costs: \$ -**

**Grab Samples: 3**

**IPP Requirements:** man hours = 3.0 x \$ 64.34 = \$ 193.02  
vehicle hours = 3.0 x \$ 4.28 = \$ 12.84

**Total IPP Grab Costs: \$ 205.86**

**Laboratory Analysis:** (each grab)  
metals 1 x \$ 7.00 = \$ 7.00  
TSS x \$ 7.00 = \$ -  
BOD x \$ 14.00 = \$ -  
total phosphate x \$ 13.50 = \$ -  
pH x \$ 8.00 = \$ -  
EPA 624 x \$ 60.00 = \$ -  
EPA 625 x \$ 115.00 = \$ -  
BTEX/MTBE x \$ 35.00 = \$ -  
sulfide x \$ 12.00 = \$ -  
oil & grease x \$ 25.00 = \$ -  
total cyanide x \$ 15.00 = \$ -  
hex chrome x \$ 10.00 = \$ -  
fecal coliform x \$ 30.00 = \$ -  
other x = \$ -

**total per grab: \$ 7.00**

**Total Laboratory Grab Costs: \$ 21.00**

**Total Grab Sample Costs: \$ 226.86**

**Total Analytical Permit Costs: \$ 226.86**

# MEMORANDUM

CITY OF GRAND RAPIDS

**DATE:** August 30, 2018

**TO:** Molly Eastman  
Utility Financial Officer

**FROM:** Arden Postma, P.E.  
Hydraulic Engineer

**SUBJECT: 2018 SEWER RATE STUDY- TASK #32 - SANITARY SEWER  
OVERSIZING RATES**

Sanitary Sewer oversizing rates are established for this year as noted below:

<u>Pipe Size</u>	<u>2017 Rate</u>	<u>2018 Rate</u>	<u>% Change</u>
8"-10"	\$4.60/ft	\$4.43/ft	-3.7%
8"-12"	\$9.00/ft	\$9.05/ft	0.56%
8"-15"	\$16.75/ft	\$17.51/ft	4.54%
10"-12"	\$4.40/ft	\$4.62/ft	5.0%
10"-15"	\$12.15/ft	\$13.08/ft	7.65%
12"-15"	\$7.75/ft	\$8.46/ft	9.16%

These rates have been determined in accordance with the Sewer Disposal System Rules and Regulations, and are approved for use from January 1, 2019 through December 31, 2019. Background information and calculations to establish these rates are on file in the Utility Engineering, Distribution and Collection Office located at 1900 Oak Industrial Drive NE. If you have any questions regarding this matter, please call me at 456-4201.

AP  
Cc: Charles Schroeder

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
TASK NO. 33**

SERVICE AREA MAPS AND SERVICE AREA LAND MASS SUMMARIES

The following summarizes Utility Service Districts (USD) land mass square miles for UAB partner communities, per information on file as of August 31, 2018:

UAB Partners	Sq. Miles of USD by CC	Percent
Grand Rapids	45.36	37.170%
Walker	20.94	17.160%
Kentwood	14.37	11.776%
Cascade	16.81	13.775%
Grand Rapids Township	8.12	6.654%
Tallmadge Township	2.45	2.008%
Wright Township	0.89	0.729%
East Grand Rapids	3.37	2.762%
Ada	7.22	5.917%
Caledonia Township	2.50	2.049%
Total	122.03	100.000%

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWER RATE STUDY  
SEWAGE DISPOSAL SYSTEM FUND  
TASK NO. 34**

INDIVIDUAL CIRCUIT BREAKER AND CITY & CUSTOMER COMMUNITY CIRCUIT BREAKER

The Third Amendment to the Water and Sanitary Sewer Agreements stipulates penalty fees shall be used to fund the circuit breaker provisions noted above. The following summarizes those values:

<u>Description</u>	<u>AMOUNT</u>	<u>PERCENT</u>
Individual Circuit Breaker (ICB)	\$ 78,762	12.50%
City & Customer Community Circuit Breaker (CCCCB)	551,333	87.50%
Total	<u>\$ 630,095</u>	<u>100.00%</u>

The following tables summarize the amount, if any, of the Circuit Breaker to be applied as a revenue credit in next year's Rate Study:

<u>Description</u>	<u>AMOUNT</u>	<u>PERCENT</u>
City & Customer Community Circuit Breaker Amount- Above	\$ 551,333	100.00%
Less: Amount Applied in Current Rate Study	(307,829)	-55.83%
Total CCCCCB Revenue Credit- Next Year's Rate Study	<u>\$ 243,504</u>	<u>44.17%</u>

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# MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 18, 2018

TO: Molly J. Eastman  
Fiscal Services Manager

FROM: Mike Lunn  
Environmental Services Manager

**SUBJECT: 2018 SEWER RATE STUDY - TASK #35- FDD Opt Out Charge**

The Footing Drain Disconnection Ordinance (FDD) Authorizes the City Manager or his designee to identify FDD Project Areas within the City of Grand Rapids based on the severity of System groundwater and stormwater inflow surcharge problems. Once designated, the ordinance requires homeowners within the FDD Project Areas to disconnect their footing drains from the City's sanitary sewer system at City expense.

The additional charge for non-compliance with the footing drain disconnection ordinance has been calculated based on current information and recommended to be \$73.04 which is the actual cost to the system for the additional flow.

ML

**CITY OF GRAND RAPIDS, MICHIGAN  
SEWER RATE STUDY  
SEWER SUPPLY SYSTEM FUND  
TASK NO. 35**

DETERMINE FOOTING DRAIN OPT OUT SEWER RATE.

**1. Avoided Claims for Sewage Backups**

Annual claim costs

Annual Backup Claims	\$150,000 /year <sup>1</sup>	Estimated annual claims cost
System Retail Customers	75,121	Total retail customers <sup>2</sup>
Grand Rapids Retail Customers	<u>58,435</u>	Total retail customers in Grand Rapids <sup>2</sup>
Annual Cost	<b>\$2.00 /yr/cust.</b>	Annual cost for claims in Grand Rapids

**2. Avoided Costs to treat the additional flow generated by footing drains**

Flow Estimate

DWF	43,800 gal/year	Average generation rate
WWF	<u>21,796</u> gal/year	Average generation rate
Total	65,596 gal/year	Average per house

Unit Conveyance & Treatment Costs

Annual average FD flows	0.065596 MG/yr	Average per house
Conveyance	\$431 /MG	Unit conveyance cost <sup>3</sup>
Treatment	<u>\$856</u> /MG	Unit treatment cost <sup>3</sup>
Conveyance & Treatment	\$1,287 /MG	
Annual Cost	<b>\$84.42 /yr/cust.</b>	Annual cost for a connected FD

**3. Actual MDNRE penalties for SSO's**

Penalties for SSO

Grand Rapids Customers	58,435	
Penalties	\$25,000	Per occurrence
Potential SSOs	0 /year	Occurrences
Annual cost	<u>0</u> \$/year	
	<b>\$0.00 /yr/cust.</b>	Annual cost for penalties

**4. Avoided Transport & Future Projects**

Cost Per FDD

Pilot Project Costs	1,788 \$/yr/FDD cust.	Annual cost of FDD work <sup>5</sup>
FDD Equivalents	<u>25,598</u> FDD	FDDs needed to correct backup problems
Total Cost	\$45,769,224	Annualized Conveyance and Storage Costs
Grand Rapids Customers	<u>58,435</u>	Customers in Grand Rapids
Cost Per single Family Home	<b>\$783.25</b> \$/home/not removed	Annualized cost for Grand Rapids Customers

**5. Avoided Administrative (Engineering & Legal) Costs**

Associated with Administration of claims, construction

Legal	0.5	Citywide claims administration
Engineering	<u>1.5</u>	Citywide engineering investigation
Staffing	2.0	Total staffing
Rate	\$200,000 /year	Average loaded staffing rate <sup>4</sup>
Total	\$400,000 /year	
Customers	<u>58,435</u>	In Grand Rapids
	<b>\$6.85 \$/yr/cust.</b>	

**Annual Cost Summary**

1. Avoided Claims	\$2.00	
2. Avoided Treatment	\$84.42	
3. Actual MDNRE Penalties for SSOs	\$0.00	
4. Avoided Future Projects	\$783.25	
5. Administration	<u>\$6.85</u>	
<b>TOTAL</b>	<b>\$876.52 \$/yr/cust.</b>	
	<b>\$73.04 /month/cust.</b>	Monthly fee for not disconnecting

**Notes:**

- <sup>1</sup> Sinking fund annual budget
- <sup>2</sup> Customer numbers per 2018 Rate Study
- <sup>3</sup> Value for sewer maintenance and WWTP costs from 2018 rate study.
- <sup>4</sup> Estimated staff rate with benefits
- <sup>5</sup> Total cost per FDD amortized over 20 years with 2.5% interest rate

**CITY OF GRAND RAPIDS, MICHIGAN  
APPENDIXES  
ANNUAL WATER/SEWER RATE REVIEW**

**Table of Contents**

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Resolution Approving Proposed Grand Rapids Water/Sewer Rates	B
Resolution Approving Proposed Partner Community Water/Sewer Rates	C
Public Comment Period Feedback and Responses	D



# CITY OF GRAND RAPIDS AGENDA ACTION REQUEST

**DATE:** November 13, 2018

**TO:** Mark Washington, City Manager

**COMMITTEE:** Committee of the Whole  
**LIAISON:** Mark Washington, City Manager

**FROM:** Molly Eastman, Fiscal Services Manager  
Fiscal Services Department

**SUBJECT:** **2018 Water/Sewer Rate Study - Introduction and Initiation of the 20 Day Comment Period**

A comprehensive review of operating and capital costs by community, in conjunction with customer base variation and usage, is performed annually for the purpose of recommending water and sewer rate adjustments for Grand Rapids and its partner communities. The City of Grand Rapids continues to adhere to its water and sewer rate-setting methodology first established in 1976-77. The methodology yields consistent performance in providing for the long-term financing needs of the Water Supply and Sewage Disposal Systems and assuring adequate debt service coverage pursuant to the Systems' master bond ordinance covenants. This year's review marks the 42<sup>nd</sup> annual water/sewer rate study report.

The City's review of the Water Supply and Sewage Disposal Systems' performance has identified the revenue requirements for water and sewer for calendar year 2019. Water Supply System revenue requirements increased by \$1,156,591 or 2.71% more than revenues generated by existing rates and charges. Sewage Disposal System revenue requirements increased by \$1,734,422 or 3.28% more than revenues generated by existing rates and charges.

Both of the Systems' rate increases are required in part due to continued investment in asset management and infrastructure improvements over the past year. Specifically for the Water System, the investment in the lead service replacement program (City of Grand Rapids impact only), continued improvements at the Lake Michigan Filtration Plant, and a variety of water mains put into service across the system has contributed to the rate increase. For the Sewer System, the assets put into service include work at the Water Resource Recovery Facility for flood protection as well as the aeration system. Routine sewer main work makes up the majority of all other assets being put into the rate base.

During the rate formulation for the Water System, it was discovered that the meter count

source report used to project revenue had been overstated. Upon researching this problem, it was evident that the inaccurate meter count had existed in the rate study for many years. This had resulted in projected water revenue being overstated which kept water rates artificially low. This adjustment has been included in the 2018 Rate Study and the corrected meter count report resulted in a 2.50% rate adjustment. However, this one-time increase is tempered by savings in operation and maintenance expenses as well as the billed volume average increase which is reflective of the system-wide growth over the past few years.

Outside of the system reinvestment, the main driver of the rate increase for the Sewer System is from the growth in operation and maintenance expenses. The Sewer System was able to fill significant vacancies and had increased expenses related to Sewer Maintenance. The rate increase however was moderated by an increase in other revenues such as Sewer Surcharge and integrated connection fees. The increase in three year average of billed volume also helped hold Sewer rates to a conservative increase. In the future, it is expected that completion of the biodigestion project and earnings from the sale of renewable natural gas under the RINS Agreement with DTE will help moderate Sewer rates.

Recommended rate adjustments incorporate provisions of the third amendment to the uniform service agreements with customer communities, which eliminates penalty fee credits from retail revenue requirements to fund the Individual Circuit Breaker (ICB) and the City and Customer Community Circuit Breaker (CCCCB). This amendment generated \$140,923 to support the ICB, the program aimed to assist retail customers requiring assistance in payment of their water/sewer bills. This amount will be supplemented with an additional appropriation of non-operating revenue. The third amendment also provides for a City and Customer Community Circuit Breaker, if sufficient funding is available, to limit each retail service area revenue requirement change to a level in line with the overall systems' initial average change. Adequate funds were available in both utility systems to apply the CCCCCB and limit the revenue requirement changes. Total City and Customer Community Circuit Breaker funds used in the 2018 rate study provided \$702,066 in relief.

Attached are detailed schedules by customer community of revenue requirement changes and rate adjustment impacts to a typical domestic and commercial customer with the system average quarterly consumption.

The preliminary 2018 water and sewer rates have been made available to the Utility Advisory Board partners and other customer communities on November 9, 2018. All partner and customer communities have a thirty-day comment period following notification of the rates as provided in the water/sewer service agreements. Approval of the rates by the City Commission is scheduled for Tuesday, December 18, 2018.

The annual rate study along with explanatory materials will be filed with the City Clerk's Office no later than close of business on November 13, 2018, and are available for public review and comment. This is at least twenty (20) days prior to the City

Commission's consideration of an approval resolution. Public notice will also be published in the newspaper, and the rate study and supplemental materials have been posted on the City's website at:

<https://www.grandrapidsmi.gov/Government/Departments/Water-System/Water-and-Sewer-Rate-Studies>

Comments will be reported and considered as part of the FY2020 budget planning process.

**Prepared by Molly Eastman**

**CITY OF GRAND RAPIDS, MICHIGAN  
2018 PRELIMINARY WATER/SEWER RATE STUDY  
SUMMARY OF REVENUE REQUIREMENT CHANGES  
FOR RATES EFFECTIVE JANUARY 1, 2019  
November 2, 2018**

	WATER (1)		SEWER (1)	
	AMOUNT	PERCENT	AMOUNT	PERCENT
GRAND RAPIDS	\$ 548,029	2.17%	\$ 1,324,832	3.66%
WALKER	117,489	3.63%	68,451	1.48%
KENTWOOD	152,075	3.63%	148,459	3.59%
CASCADE TWP	130,176	3.63%	58,007	2.40%
GRAND RAPIDS TWP	81,885	3.63%	89,109	3.66%
TALLMADGE TWP	3,276	1.61%	(2,484)	-0.56%
WRIGHT TWP	N/A	N/A	9,970	3.66%
EAST GRAND RAPIDS	52,155	6.73%	2,915	0.39%
ADA TWP	38,784	3.07%	22,532	1.79%
OTTAWA COUNTY	37,691	1.72%	NA	NA
GAINES TWP	N/A	N/A	14,911	7.70%
CALEDONIA TWP	N/A	N/A	(2,280)	-1.57%
<b>SYSTEM</b>	<b>\$ 1,156,591</b>	<b>2.71%</b>	<b>\$ 1,734,422</b>	<b>3.28%</b>

(1) Change in revenue requirements based on revenues currently generated from rates, customer base and volumes reported in the preliminary rate study (Includes consideration for relief from CCCC B).

**DISCLOSE RELIEF PROVIDED BY CITY & CUSTOMER COMMUNITY CIRCUIT BREAKER (CCCCB)**

	WATER		SEWER	
	AMOUNT	PERCENT	AMOUNT	PERCENT
SYSTEM REVENUE REQUIREMENT	\$ 43,868,464	2.71%	\$ 54,611,300	3.28%
ADD: CCCC B RELIEF	394,237	0.92%	307,829	0.58%
LESS: CAPITAL INVESTMENT REIMBURSEMENT			(107,854)	-0.21%
<b>SYSTEM CHANGE- WITHOUT RELIEF</b>	<b>\$ 44,262,701</b>	<b>3.63%</b>	<b>\$ 54,811,275</b>	<b>3.66%</b>

**CITY OF GRAND RAPIDS, MICHIGAN**  
**2018 PRELIMINARY WATER/SEWER RATE STUDY**  
**IMPACT OF RATE ADJUSTMENTS ON DOMESTIC USERS**  
**BY CUSTOMER COMMUNITY \***  
**November 2, 2018**

	<u>APPROXIMATE QUARTERLY BILL</u>		<u>CHANGE</u>	
	<u>2018</u>	<u>2019</u>	<u>DOLLARS</u>	<u>PERCENT</u>
<b>GRAND RAPIDS</b>				
WATER	\$ 84.48	\$ 86.28	\$ 1.80	2.13%
SEWER	114.69	119.04	4.35	3.79%
	<u>\$ 199.17</u>	<u>\$ 205.32</u>	<u>\$ 6.15</u>	3.09%
BASE RATIO	1.00	1.00		
<b>WALKER</b>				
WATER	\$ 82.47	\$ 85.32	\$ 2.85	3.46%
SEWER	131.80	133.55	1.75	1.33%
	<u>\$ 214.27</u>	<u>\$ 218.87</u>	<u>\$ 4.60</u>	2.15%
RATIO TO GR	1.08	1.07		
<b>KENTWOOD</b>				
WATER	\$ 84.72	\$ 87.48	\$ 2.76	3.26%
SEWER	71.03	73.22	2.19	3.08%
	<u>\$ 155.75</u>	<u>\$ 160.70</u>	<u>\$ 4.95</u>	3.18%
RATIO TO GR	0.78	0.78		
<b>CASCADE TWP</b>				
WATER	\$ 129.81	\$ 134.46	\$ 4.65	3.58%
SEWER	144.71	147.89	3.18	2.20%
	<u>\$ 274.52</u>	<u>\$ 282.35</u>	<u>\$ 7.83</u>	2.85%
RATIO TO GR	1.38	1.38		
<b>GRAND RAPIDS TWP</b>				
WATER	\$ 98.01	\$ 101.40	\$ 3.39	3.46%
SEWER	124.94	129.28	4.34	3.47%
	<u>\$ 222.95</u>	<u>\$ 230.68</u>	<u>\$ 7.73</u>	3.47%
RATIO TO GR	1.12	1.12		
<b>TALLMADGE TWP</b>				
WATER	\$ 108.48	\$ 110.61	\$ 2.13	1.96%
SEWER	283.89	282.06	(1.83)	-0.64%
	<u>\$ 392.37</u>	<u>\$ 392.67</u>	<u>\$ 0.30</u>	0.08%
RATIO TO GR	1.97	1.91		

\* THE COMPARISONS ABOVE ARE BASED ON SYSTEM AVERAGE DOMESTIC CUSTOMER  
QUARTERLY CONSUMPTION OF: WATER- 27.00 UNITS OR 20,196 GALLONS  
SEWER - 19.00 UNITS OR 14,212 GALLONS  
NO. OF MONTHS: 3

**REU (RESIDENTIAL EQUIVALENT UNIT) CUSTOMER COMMUNITY- APPROXIMATE QUARTERLY BILL**

<b>WRIGHT TWP-</b>				
SEWER (No. of REU 1.00)	<u>\$ 161.19</u>	<u>\$ 167.10</u>	<u>\$ 5.91</u>	3.67%

**CITY OF GRAND RAPIDS, MICHIGAN**  
**2018 PRELIMINARY WATER/SEWER RATE STUDY**  
**IMPACT OF RATE ADJUSTMENTS ON COMMERCIAL USERS**  
**BY CUSTOMER COMMUNITY**  
**November 2, 2018**

	<u>APPROXIMATE QUARTERLY BILL</u>		<u>CHANGE</u>	
	<u>2018</u>	<u>2019</u>	<u>DOLLARS</u>	<u>PERCENT</u>
<b>GRAND RAPIDS</b>				
WATER	\$ 495.18	\$ 495.21	\$ 0.03	0.01%
SEWER	<u>786.57</u>	<u>800.10</u>	<u>13.53</u>	1.72%
	<u>\$ 1,281.75</u>	<u>\$ 1,295.31</u>	<u>\$ 13.56</u>	1.06%
BASE RATIO	1.00	1.00		
<b>WALKER</b>				
WATER	\$ 427.89	\$ 443.94	\$ 16.05	3.75%
SEWER	<u>673.62</u>	<u>684.33</u>	<u>10.71</u>	1.59%
	<u>\$ 1,101.51</u>	<u>\$ 1,128.27</u>	<u>\$ 26.76</u>	2.43%
RATIO TO GR	0.86	0.87		
<b>KENTWOOD</b>				
WATER	\$ 410.64	\$ 426.54	\$ 15.90	3.87%
SEWER	<u>572.76</u>	<u>593.19</u>	<u>20.43</u>	3.57%
	<u>\$ 983.40</u>	<u>\$ 1,019.73</u>	<u>\$ 36.33</u>	3.69%
RATIO TO GR	0.77	0.79		
<b>CASCADE TWP</b>				
WATER	\$ 634.17	\$ 656.97	\$ 22.80	3.60%
SEWER	<u>714.48</u>	<u>731.31</u>	<u>16.83</u>	2.36%
	<u>\$ 1,348.65</u>	<u>\$ 1,388.28</u>	<u>\$ 39.63</u>	2.94%
RATIO TO GR	1.05	1.07		
<b>GRAND RAPIDS TWP</b>				
WATER	\$ 492.69	\$ 511.47	\$ 18.78	3.81%
SEWER	<u>625.59</u>	<u>648.06</u>	<u>22.47</u>	3.59%
	<u>\$ 1,118.28</u>	<u>\$ 1,159.53</u>	<u>\$ 41.25</u>	3.69%
RATIO TO GR	0.87	0.90		
<b>TALLMADGE TWP</b>				
WATER	\$ 773.25	\$ 786.27	\$ 13.02	1.68%
SEWER	<u>2,275.62</u>	<u>2,262.03</u>	<u>(13.59)</u>	-0.60%
	<u>\$ 3,048.87</u>	<u>\$ 3,048.30</u>	<u>\$ (0.57)</u>	-0.02%
RATIO TO GR	2.38	2.35		

\* THE COMPARISONS ABOVE ARE BASED ON SYSTEM AVERAGE COMMERCIAL CUSTOMER  
QUARTERLY CONSUMPTION OF : WATER- 225.00 UNITS OR 168,300 GALLONS  
SEWER - 213.00 UNITS OR 159,324 GALLONS  
NO. OF MONTHS: 3

**REU (RESIDENTIAL EQUIVALENT UNIT) CUSTOMER COMMUNITY- APPROXIMATE QUARTERLY BILL**

<b>WRIGHT TWP</b>				
SEWER (No. of REU 1.00)	<u>\$ 161.19</u>	<u>\$ 167.10</u>	<u>\$ 5.91</u>	3.67%

**CITY OF GRAND RAPIDS, MICHIGAN**  
**2018 PRELIMINARY WATER/SEWER RATE STUDY**  
**WATER & SEWER RATES FOR GRAND RAPIDS & RETAIL CUSTOMER COMMUNITIES**  
**EFFECTIVE JANUARY 1, 2019**  
**November 2, 2018**

**WATER RATES**

COMMODITY	METER CODE	GRAND RAPIDS	WALKER	KENTWOOD	CASCADE	GR. RAPIDS TOWNSHIP	TALLMADGE TOWNSHIP	WRIGHT TOWNSHIP
CHARGE (HCF)		\$ 1.98	\$ 1.70	\$ 1.58	\$ 2.41	\$ 1.92	\$ 3.38	NA
<b>MONTHLY SERVICE CHARGE BY METER SIZE</b>								
3/4" & Less	A	\$ 10.94	\$ 13.14	\$ 14.94	\$ 23.13	\$ 16.52	\$ 6.45	NA
1"	B	\$ 16.57	\$ 20.48	\$ 23.68	\$ 38.24	\$ 26.49	\$ 8.59	NA
1-1/4"	C	\$ 23.81	\$ 29.92	\$ 34.92	\$ 57.67	\$ 39.31	\$ 11.34	NA
1-1/2"	D	\$ 32.66	\$ 41.46	\$ 48.66	\$ 81.42	\$ 54.98	\$ 14.70	NA
2"	E	\$ 55.18	\$ 70.83	\$ 83.63	\$ 141.87	\$ 94.86	\$ 23.26	NA
3"	F	\$ 119.54	\$ 154.74	\$ 183.54	\$ 314.58	\$ 208.82	\$ 47.70	NA
4"	G	\$ 209.64	\$ 272.22	\$ 323.42	\$ 556.37	\$ 368.36	\$ 81.92	NA
6" & Over	H	\$ 467.06	\$ 607.86	\$ 723.06	\$ 1,247.22	\$ 824.18	\$ 179.70	NA

**SEWER RATES**

COMMODITY	METER CODE	GRAND RAPIDS	WALKER	KENTWOOD	CASCADE	GR. RAPIDS TOWNSHIP	TALLMADGE TOWNSHIP	WRIGHT TOWNSHIP
CHARGE (HCF)		\$ 3.33	\$ 2.54	\$ 2.63	\$ 2.66	\$ 2.38	\$ 9.87	NA
REU Charge (Monthly) *		NA	NA	NA	NA	NA	NA	\$ 55.70
<b>MONTHLY SERVICE CHARGE BY METER SIZE</b>								
3/4" & Less	A	\$ 18.59	\$ 28.43	\$ 7.75	\$ 32.45	\$ 28.02	\$ 31.51	NA
1"	B	\$ 30.27	\$ 47.77	\$ 11.00	\$ 54.91	\$ 47.04	\$ 53.24	NA
1-1/4"	C	\$ 45.29	\$ 72.63	\$ 15.18	\$ 83.79	\$ 71.49	\$ 81.18	NA
1-1/2"	D	\$ 63.65	\$ 103.01	\$ 20.29	\$ 119.09	\$ 101.37	\$ 115.33	NA
2"	E	\$ 110.38	\$ 180.35	\$ 33.29	\$ 208.94	\$ 177.44	\$ 202.25	NA
3"	F	\$ 243.89	\$ 401.33	\$ 70.45	\$ 465.65	\$ 394.77	\$ 450.61	NA
4"	G	\$ 430.80	\$ 710.70	\$ 122.47	\$ 825.04	\$ 699.04	\$ 798.31	NA
6" & Over	H	\$ 964.85	\$ 1,594.61	\$ 271.09	\$ 1,851.89	\$ 1,568.37	\$ 1,791.73	NA

\* REU - Residential Equivalent Unit ( Wright Township Only )

**FIRE PROTECTION RATES- ALL GOVERNMENTAL UNITS**

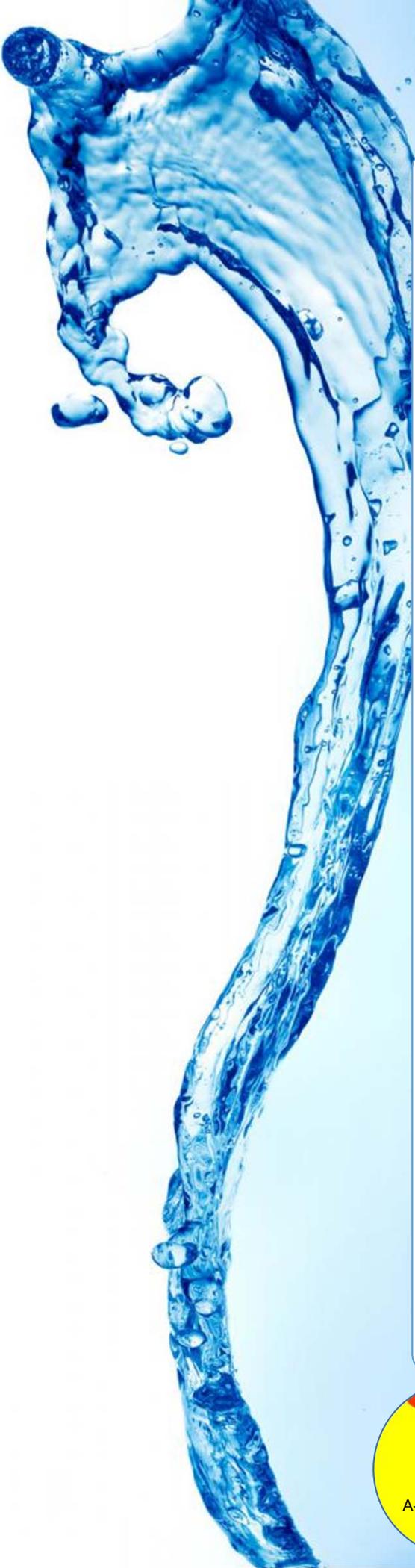
6"	H	\$ 18.94	10"	J	\$ 52.66
8"	I	\$ 33.62	12"	K	\$ 75.77

**NOTE:** Monthly defined as 1/12th of 365 days.

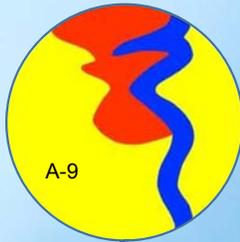
**CITY OF GRAND RAPIDS, MICHIGAN**  
**2018 PRELIMINARY WATER/SEWER RATE STUDY**  
**IMPACT OF RATE ADJUSTMENTS ON WHOLESALE CUSTOMER COMMUNITIES**  
**EFFECTIVE JANUARY 1, 2019**  
**November 2, 2018**

	<u>2018</u>	<u>2019</u>	<u>PERCENTAGE CHANGE</u>
<b>EAST GRAND RAPIDS</b>			
WATER - SERVICE (MONTHLY)	\$14,728.00	\$17,209.00	16.85%
- COMMODITY (100 CF)	\$1.07	\$1.11	3.74%
SEWER - SERVICE (MONTHLY)	\$2,198.00	\$2,243.00	2.05%
- COMMODITY (MG)	\$1,834.00	\$1,840.00	0.33%
<b>ADA TWP</b>			
WATER - SERVICE	\$41,158.00	\$42,811.00	4.02%
- COMMODITY	\$1.22	\$1.25	2.46%
SEWER - SERVICE	\$45,942.00	\$46,008.00	0.14%
- COMMODITY	\$2,288.00	\$2,358.00	3.06%
<b>OTTAWA COUNTY</b>			
WATER - SERVICE	\$414.00	\$445.00	7.49%
- COMMODITY	\$1.17	\$1.19	1.71%
<b>GAINES TWP</b>			
SEWER - SERVICE	\$1,488.00	\$1,605.00	7.86%
- COMMODITY	\$1,549.00	\$1,668.00	7.68%
<b>CALEDONIA TWP</b>			
SEWER - SERVICE	\$719.00	\$752.00	4.59%
- COMMODITY	\$4,587.00	\$4,497.00	-1.96%

**NOTE: Monthly defined as 1/12th of 365 days.**



# Water/Sewer Preliminary Rate Study 2018





# Building Blocks of the Revenue Requirement

Operating and Maintenance  
Expense

Assets:  
Depreciation  
& Return on Investment

Other Items:  
CSO &  
Payback Agreements

Revenue Credits

City and Customer  
Community Circuit Breaker

Billed Volume



# Operations & Maintenance Expenses



- Water
  - Filled more vacancies - increased personnel expenses
  - Key updates to equipment at the LMFP and Coldbrook - electricity and other supply expenses increased

A-11

- Sewer
  - Filled more vacancies - increased personnel expenses
  - Supplies and other contractual services increased significantly for Sewer Maintenance

2018 PRELIMINARY WATER/SEWER RATE STUDY  
WATER SUPPLY & SEWAGE DISPOSAL SYSTEMS  
OPERATING EXPENSES (MILLIONS) \*



\* Total operating expenses reported in Comprehensive Annual Report (CAFR) less depreciation plus transfer out; does not include interest expense on debt.

\*\* Total operating expenses for FY2016 exclude loss fixed assets.



# System Investment – Net Addition of Assets

## Water – June 30, 2018

- **Integrated system:**
    - \$1.4M LMFP Improvements (HVAC/Pumps)
  - **Non-integrated system:**
    - Grand Rapids
      - Water Mains: \$9.4M
    - Walker
      - Water Mains: \$121k
    - Kentwood
      - East Paris Reservoir: \$52k
- Total: \$11M

## Water – December 31, 2018

- **Integrated system:**
    - \$2.0M LMFP Improvements (HVAC/Pumps)
    - \$706k Other Improvements (Roof/Asphalt)
  - **Non-integrated system:**
    - Grand Rapids
      - Water Mains: \$8.0M
      - Other: \$1.2M
    - Walker
      - Water Mains: \$369k
    - Kentwood
      - Water Mains: \$1.6M
    - Cascade
      - Water Mains: \$432k
    - Grand Rapids TWP
      - Water Mains: \$1.3M
    - Tallmadge
      - Water Mains: \$373k
- Total: \$15.9M



# System Investment – Net Addition of Assets

## Sewer – June 30, 2018

- Integrated system:
  - \$365k WWTP Berm and Aeration
- Non-integrated system:
  - Grand Rapids
    - Sewer Mains: \$4.5M

Total: \$4.9M

## Sewer – December 30, 2018

- Non-integrated system:
  - Grand Rapids
    - Sewer Mains: \$6.1M
  - Walker
    - Sewer Mains: \$214k
  - Kentwood
    - Sewer Mains: \$1.2M
  - Cascade
    - Sewer Mains: \$104k
  - Grand Rapids TWP
    - Sewer Mains: \$494k
  - Tallmadge
    - Sewer Mains: \$373k

Total: \$8.5M



# Circuit Breaker Calculation

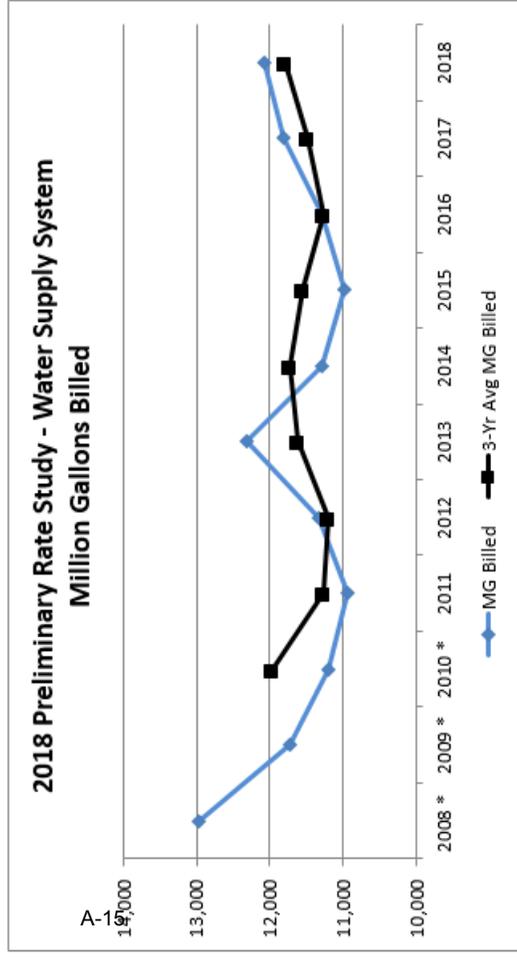
	Water	Sewer
City & Customer Community Circuit Breaker (CCCCB): Penalty Revenue (87.5%)*	\$435,128	\$551,333
Individual Circuit Breaker (ICB):		
Penalty Revenue (12.5%)	62,161	78,762
Other Non-op Revenue	80,000	
Total ICB	\$142,161	\$78,762
<b>Total Circuit Breaker Funds</b>	<b>\$577,289</b>	<b>\$630,095</b>
* CCCC B funds used in 2018 Rate Study	\$394,237	\$307,829



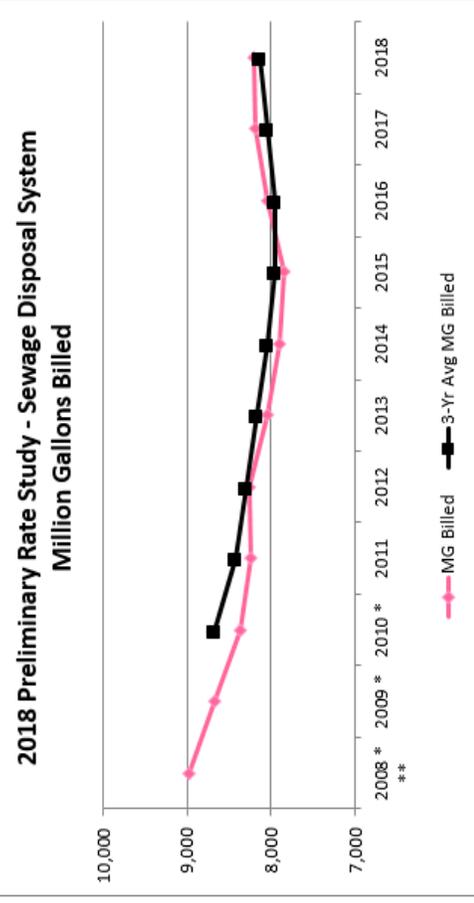
# Billed Volume Average – Revenue Expectation

- 2018 Water Volume up 2.27% from 2017
- 3-Yr Avg Water Volume up 2.66%

- 2018 Sewer Volume up 0.22% from 2017
- 3-Yr Avg Sewer Volume up 1.27%



\* Volumes were restated from these Rate Studies to reflect actual billings without adjustment for accrued revenues.



\* Volumes were restated from these Rate Studies to reflect actual billings without adjustment for accrued revenues.

\*\* Service to North Kent/Albion ended November 2008; 2007 included 1,487.4 MG billed to North Kent/Albion.



# Rate Impact Factors - Water

Major Rate Drivers	% Impact
<b>Increases:</b>	
Integrated Connection Fees	0.52%
Meter Report Correction	2.50%
Assets – ROI and Depreciation	2.77%
Other System Revenues	0.21%
<b>Decreases:</b>	
O&M (Includes Lead Services)	(1.05%)
Circuit Breaker Use	(0.01%)
Billed Volume Average/Est Collection 2019	(2.23%)
<b>Proposed Rate Increase</b>	<b>2.71%</b>



# Rate Impact Factors - Sewer

Major Rate Drivers	% Impact
<b>Increases:</b>	
O&M	3.55%
Assets – ROI and Depreciation	2.10%
<b>Decreases:</b>	
Other System Revenues	(0.87%)
Circuit Breaker Use	(0.32%)
Integrated Connection Fees	(0.12%)
Billed Volume Average/Est Collection 2019	(1.06%)
<b>Proposed Rate Increase</b>	<b>3.28%</b>



	WATER (1)		SEWER (1)	
	AMOUNT	PERCENT	AMOUNT	PERCENT
GRAND RAPIDS	\$ 548,029	2.17%	\$ 1,324,832	3.66%
WALKER	117,489	3.63%	68,451	1.48%
KENTWOOD	152,075	3.63%	148,459	3.59%
CASCADE TWP	130,176	3.63%	58,007	2.40%
GRAND RAPIDS TWP	81,885	3.63%	89,109	3.66%
TALLMADGE TWP	3,276	1.61%	(2,484)	-0.56%
WRIGHT TWP	N/A	N/A	9,970	3.66%
EAST GRAND RAPIDS	52,155	6.73%	2,915	0.39%
ADA TWP	38,784	3.07%	22,532	1.79%
OTTAWA COUNTY	37,691	1.72%	NA	NA
GAINES TWP	N/A	N/A	14,911	7.70%
CALEDONIA TWP	N/A	N/A	(2,280)	-1.57%
<b>SYSTEM</b>	<b>\$ 1,156,591</b>	<b>2.71%</b>	<b>\$ 1,734,422</b>	<b>3.28%</b>

(1) Change in revenue requirements based on revenues currently generated from rates, customer base and volumes reported in the preliminary rate study (includes consideration for relief from CCCCB).

**DISCLOSE RELIEF PROVIDED BY CITY & CUSTOMER COMMUNITY CIRCUIT BREAKER (CCCCB)**

	WATER		SEWER	
	AMOUNT	PERCENT	AMOUNT	PERCENT
SYSTEM REVENUE REQUIREMENT	\$ 43,868,464	2.71%	\$ 54,611,300	3.28%
ADD: CCCCB RELIEF	394,237	0.92%	307,829	0.58%
LESS: CAPITAL INVESTMENT REIMBURSEMENT			(107,854)	-0.21%
<b>SYSTEM CHANGE- WITHOUT RELIEF</b>	<b>\$ 44,262,701</b>	<b>3.63%</b>	<b>\$ 54,811,275</b>	<b>3.66%</b>



	APPROXIMATE QUARTERLY BILL		CHANGE	
	2018	2019	DOLLARS	PERCENT
<b>GRAND RAPIDS</b>				
WATER	\$ 84.48	\$ 86.28	\$ 1.80	2.13%
SEWER	114.69	119.04	4.35	3.79%
	\$ 199.17	\$ 205.32	\$ 6.15	3.09%
BASE RATIO	1.00	1.00		
<b>WALKER</b>				
WATER	\$ 82.47	\$ 85.32	\$ 2.85	3.46%
SEWER	131.80	133.55	1.75	1.33%
	\$ 214.27	\$ 218.87	\$ 4.60	2.15%
RATIO TO GR	1.08	1.07		
<b>KENTWOOD</b>				
WATER	\$ 84.72	\$ 87.48	\$ 2.76	3.26%
SEWER	71.03	73.22	2.19	3.08%
	\$ 155.75	\$ 160.70	\$ 4.95	3.18%
RATIO TO GR	0.78	0.78		
<b>CASCADE TWP</b>				
WATER	\$ 129.81	\$ 134.46	\$ 4.65	3.58%
SEWER	144.71	147.89	3.18	2.20%
	\$ 274.52	\$ 282.35	\$ 7.83	2.85%
RATIO TO GR	1.38	1.36		
<b>GRAND RAPIDS TWP</b>				
WATER	\$ 98.01	\$ 101.40	\$ 3.39	3.46%
SEWER	124.94	129.28	4.34	3.47%
	\$ 222.95	\$ 230.68	\$ 7.73	3.47%
RATIO TO GR	1.12	1.12		
<b>TALLMADGE TWP</b>				
WATER	\$ 108.48	\$ 110.61	\$ 2.13	1.96%
SEWER	283.89	282.06	(1.83)	-0.64%
	\$ 392.37	\$ 392.67	\$ 0.30	0.08%
RATIO TO GR	1.97	1.91		

\* THE COMPARISONS ABOVE ARE BASED ON SYSTEM AVERAGE DOMESTIC CUSTOMER QUARTERLY CONSUMPTION OF: WATER- 27.00 UNITS OR 20,196 GALLONS  
SEWER- 19.00 UNITS OR 14,212 GALLONS  
NO. OF MONTHS: 3



# Historical Rate Changes

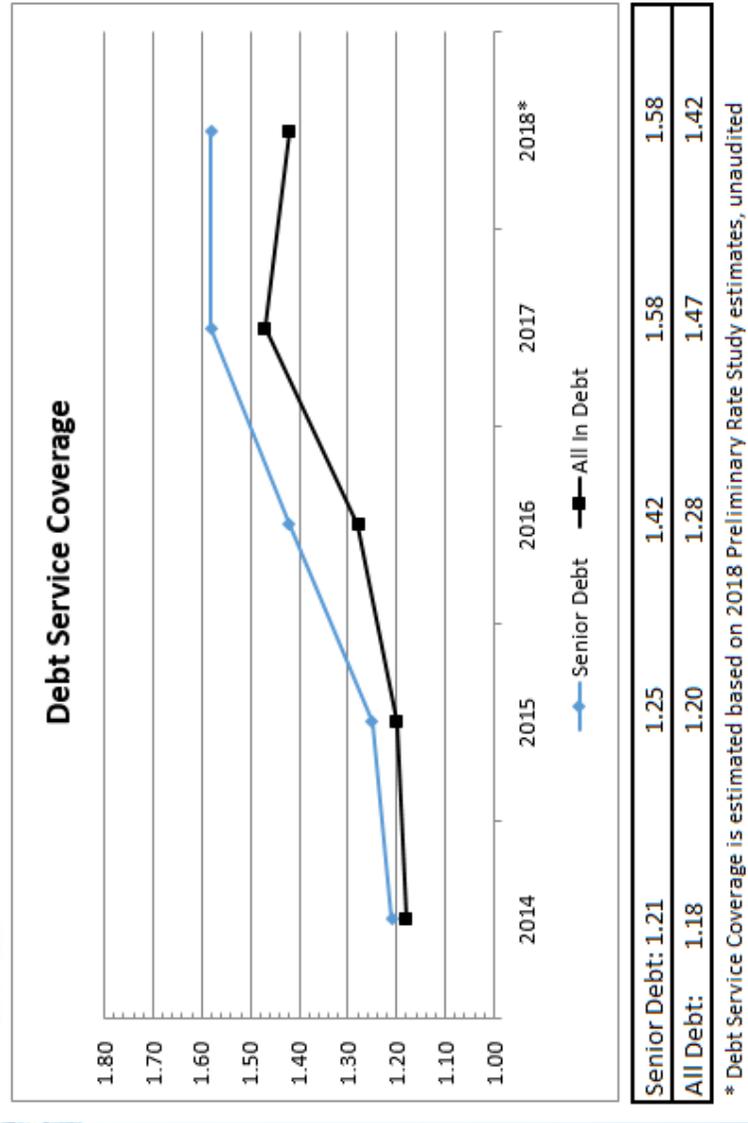
Rate Study Year	Water Supply System			Sewage Disposal System		
	Revenue Requirements	% change in RR over prev year	% gross rate incr (decr) **	Revenue Requirements	% change in RR over prev year	% gross rate incr (decr) *
2004	\$ 35,193,350	0.13%	4.41%	\$ 32,212,584	5.28%	9.03%
2005	37,329,089	6.07%	5.94%	36,283,756	12.64%	12.76%
2006	39,629,260	6.16%	0.63%	38,301,107	5.56%	4.94%
2007	40,270,271	1.62%	4.95%	42,742,825	11.60%	15.73%
2008	42,017,680	4.34%	2.45%	47,092,925	10.18%	14.69%
2009	42,939,752	2.19%	9.89%	51,378,424	9.10%	14.04%
2010	41,200,107	-4.05%	-6.27%	49,673,390	-3.32%	-3.30%
2011	41,802,404	1.46%	5.15%	50,082,541	0.82%	2.89%
2012	39,247,442	-6.11%	-4.41%	48,183,681	-3.79%	-2.46%
2013	38,646,748	-1.53%	-4.30%	48,946,212	1.58%	2.46%
2014	40,055,985	3.65%	2.50%	49,962,043	2.08%	2.81%
2015	40,178,439	0.31%	1.00%	49,868,027	-0.19%	0.30%
2016	41,187,517	2.51%	3.63%	50,400,344	1.07%	0.36%
2017	42,828,972	3.99%	2.45%	52,319,981	3.81%	3.08%
2018	43,868,464	2.43%	2.71%	54,611,300	4.38%	3.28%
<b>AVG</b>	<b>40,426,365</b>	<b>1.54%</b>	<b>2.05%</b>	<b>46,803,943</b>	<b>4.05%</b>	<b>5.37%</b>

\* Revenue Requirements per the 2018 Preliminary Rate Study.

\*\* The percentage gross rate increase (decrease) differs from the annual percentage change in Revenue Requirements due to differences in usage volumes/customers/application of Circuit Breaker.



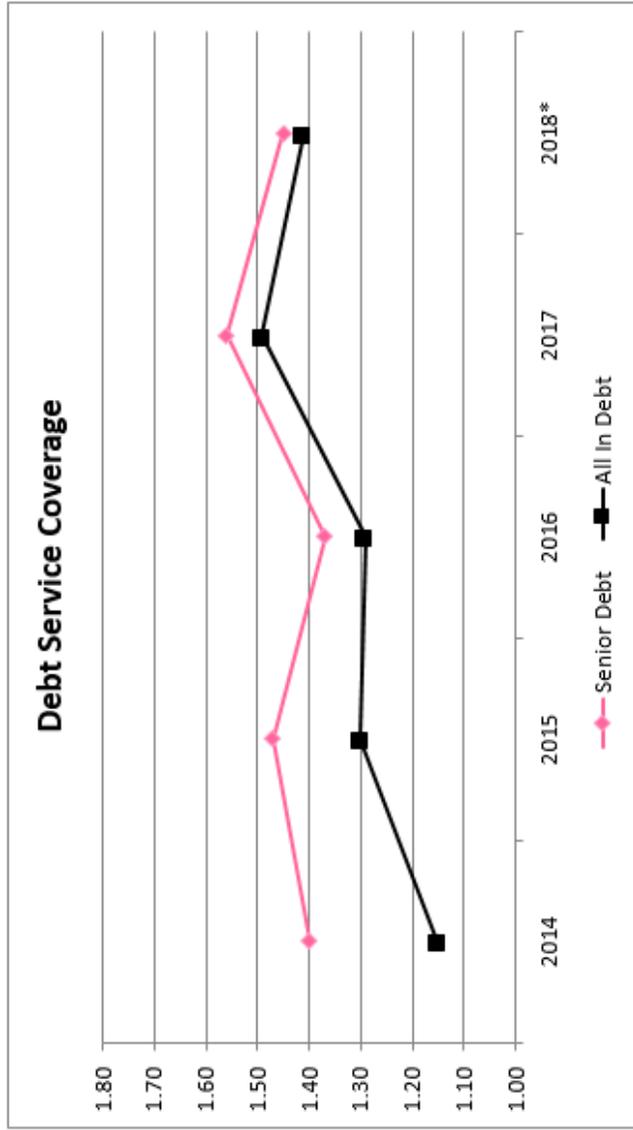
# Historical Debt Coverage Water



Historical debt coverage as presented in Task 25a of the Annual Water/Sewer Rate Study



# Historical Debt Coverage Sewer



Senior Debt:	1.40	1.47	1.37	1.56	1.45
All Debt:	1.15	1.30	1.29	1.49	1.41

\* Debt Service Coverage is estimated based on 2018 Preliminary Rate Study estimates, unaudited

Historical debt coverage as presented in Task 25a of the Annual Water/Sewer Rate Study



## Next Steps

- **November 9<sup>th</sup>**: Prelim Rate Study available & 30-day review and comment period open for partner communities
- **November 13<sup>th</sup>**: Rate Study Presentation to City of Grand Rapids Commission & Initiation of 20 day Public Comment Period
- **November 14<sup>th</sup>**: Rate Study Presentation to Utility Advisory Board
- **Late November/Early December**: Meetings with Partner Communities
- **December 18<sup>th</sup>**: Approval of the 2019 Water and Sanitary Sewer System Rates by resolution by the City of Grand Rapids Commission

Rate studies available online at:

<https://www.grandrapidsmi.gov/Government/Departments/Water-System/Water-and-Sewer-Rate-Studies>

**88390 Result: Adopted.**  
**Mover: Jones. Supporter: Kelly.**

WHEREAS:

1. The Water/Sewer rate studies have been undertaken and completed for the years 1976 through 2017; and
2. The 2018 Water/Sewer rate review has been completed using the same general methodology as the 1976 through 2017 Water/Sewer rate studies, as adjusted where appropriate for the uniform water and sanitary sewer service agreements; therefore

RESOLVED:

1. That pursuant to Section 2.33 of Chapter 26 of the City Code, the following City water rates, charges and fees will be as follows:

a. Front foot rate

Domestic	\$100
Commercial	\$140

b. Integrated water connection fees

i. Plan Review and Connection Fee (PRC)

1. Residential Users (three residential units or less)

Meter Size	PRC Fee
¾ inch or less	\$350
1 inch	\$360
1½ inch	\$360

2. All other Users (including residential of more than 3 units, commercial, industrial, governmental and religious)

Meter Size	PRC Fee
¾ inch or less	\$680
1 inch	\$870
1½ inch	\$1,140
2 inch	\$1,610
3 inch	\$1,960
4 inch	\$2,730
6 inch	\$3,970

- ii. Meter Capacity Fee (MCC) (when water and sanitary sewer connections are made at the same time only one Meter Capacity Fee shall be charged

Meter Size	MCC Fee
¾ inch or less	\$210
1 inch	\$250
1½ inch	\$800
2 inch	\$900
3 inch	\$1,100
4 inch	At cost
6 inch	At cost

- iii. Fire Protection Review Fee

All Fire Service Sizes	\$695
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- c. Commodity rates within the City of Grand Rapids

Domestic	\$1.98 per 100 cubic feet
Commercial	\$1.98 per 100 cubic feet
Industrial	\$1.98 per 100 cubic feet

- d. Monthly service charge within the City of Grand Rapids

Size of Meter	Charge
¾ inch or less	\$10.94
1 inch	\$16.57
1¼ inch	\$23.81
1½ inch	\$32.66
2 inches	\$55.18
3 inches	\$119.54
4 inches	\$209.64
6 inches or larger	\$467.06

- e. Fire protection charge

Size of Pipe	Monthly	Quarterly
6 inches	\$18.94	\$56.82
8 inches	\$33.62	\$100.86
10 inches	\$52.66	\$157.98
12 inches	\$75.77	\$227.31

f. Water service pipe costs

	50 ft.	60 ft.	66 ft.	80 ft.	100 ft.
	R.O.W.	R.O.W.	R.O.W.	R.O.W.	R.O.W.
Cost for 1 inch Water Service	\$2,800	\$3,300	\$3,500	\$4,000	\$5,000
Cost for 1½ inch Water Service	\$3,800	\$4,300	\$4,600	\$5,200	\$6,100
Cost for 2 inches Water Service	\$4,300	\$4,400	\$5,200	\$5,800	\$6,900

- g. Hydrant use permit (pool filling per connection) - \$100 refundable deposit + \$75/week
- h. Hydrant use permit (non-metered connection – residential customers) - \$50
- i. Hydrant use permit (metered connection) - \$300
- j. Metered hydrant connection use fee (per rental up to one season) - City of Grand Rapids account holder - \$500 refundable deposit + \$25/week + metered volume (commodity charges at City of Grand Rapids rate)
- k. Metered hydrant connection use fee (per rental up to one season) - Non-account holder - \$500 refundable deposit + \$25/week + metered volume (commodity charges at City of Grand Rapids rate)
- l. Hydrant flow test - \$200
- m. Tapping permits (all sizes) - \$375
- n. Meter service on/off requests

Meter Size	Fee
All Sizes	\$50
Inspections/repair scheduled on & off request (may also need meter install)	\$60

o. Meter Replacement (Non-System Planned/Scheduled Replacement)

Meter Size	Fee
------------	-----

¾ inch or less	\$210
1 inch	\$250
1½ inch	\$800
2 inches	\$900
3 inches	\$1,100
4 inches or larger	At cost

- p. Final or actual meter reading - \$45
- q. Meter testing fee – paid by customer if meter is accurate, no charge if meter is faulty

Meter Size	Fee
¾ inch or less	\$100
1 inch	\$100
1½ inch	\$200
2 inches	\$300
3 inches	\$400
4 inches or larger	Cost

- r. Meter interface unit replacement - \$150
- s. Security deposit - \$500
- t. Street opening permit - \$100
- u. Water inspection permit (within City) - \$70
- v. Water inspection permit (outside City) - \$85
- w. Sanitary Service line inspection permit (within City) - \$70
- x. Sanitary Service line inspection permit (outside City) - \$85
- y. Storm Service line inspection permit (within City) - \$70
- z. Storm Service line inspection permit (outside City) - \$85
- aa. Footing drain lateral inspection permit (within City) - \$70
- bb. Footing drain lateral inspection permit (outside City) - \$85
- cc. Sewer lateral service demolition/cap off inspection fee (within City) - \$70
- dd. Sewer lateral service demolition/cap off inspection fee (outside City) - \$85
- ee. Plumbing service re-inspection fee - \$70
- ff. Cross connection re-inspection fee - \$75
- gg. Irrigation Service Cut/Cap Administration fee - \$65
- hh. Delinquent Commercial Backflow Test fee (per device) - \$25
- ii. Customer requested onsite service (nonscheduled) - \$100
- jj. Turn-on/turn-off request for inspections/repair scheduled - \$110
- kk. Statement research fee – document creation for detailed history of usage, bills and/or payments made beyond 13 months from date of request - \$55

- ll. Late payment penalty – 10% of net
- mm. Penalty for failure to keep appointment - \$45
- nn. Unauthorized use, operation, tampering, or removal of any Water or Sanitary Sewer System owned or maintained valve, asset, infrastructure, or equipment (for example, but not limited to, bypass valves, meters, meter reading equipment, hydrants, and curb stops - \$500 plus double commodity rate for estimated volume and doubling of penalties for each subsequent infraction
- oo. Unauthorized use or illegal connection to any Water or Sanitary Sewer System owned pipe, property and/or private plumbing system served by the Water and/or Sanitary Sewer System - \$500 plus double commodity rate for estimated volume and doubling of penalties for each subsequent infraction
- pp. Failure to return or return of damaged beyond repair / repairable hydrant connection equipment – Cost + 10%
- qq. Repair/replace damage to fire hydrant – Cost + 10%
- rr. Permit infractions/violations – \$100 plus double the commodity rate for estimated volume and doubling of penalties for each subsequent violation
- ss. Returned check charge - \$30
- tt. Unauthorized service tap of watermain - \$500
- uu. Any cost recovery due to damaged caused or undue oversight of any location, account, or infrastructure of the Water and/or Sanitary Sewer System will be charged in accordance with cost recovery methodology for time and materials, including a 10% administrative charge for processing
- vv. Watermain oversizing rates

8 – 12 inches	\$26.40 per lineal foot
12 – 16 inches	\$32.24 per lineal foot
8 – 16 inches	\$58.64 per lineal foot

ww. Circuit breaker allocation

Individual Circuit Breaker (ICB)	\$220,923
City and Customer Community Circuit Breaker (CCCCB)	\$702,066

2. That Pursuant to Section 2.94 of Chapter 27 of the City Code, the following City sewer rates, charges and fees will be as follows:

a. Front foot rate

Domestic	\$105
Commercial	\$135

- b. Integrated sewer connection fees (based on water meter size)
  - i. Plan Review and Connection Fee (PRC)

1. Residential Users (three residential units or less)

Meter Size	PRC Fee
¾ inch or less	\$350
1 inch	\$360
1½ inch	\$360

2. All other Users (including residential of more than 3 units, commercial, industrial, governmental and religious)

Meter Size	PRC Fee
¾ inch or less	\$680
1 inch	\$870
1½ inch	\$1,140
2 inch	\$1,610
3 inch	\$1,960
4 inch	\$2,730
6 inch	\$3,970

- ii. Meter Capacity Fee (when water and sanitary sewer connections are made at the same time only one Meter Capacity Fee shall be charged)

Meter Size	MCC Fee
¾ inch or less	\$210
1 inch	\$250
1½ inch	\$800
2 inch	\$900
3 inch	\$1,100
4 inch	At cost
6 inch	At cost

iii. Fire Protection Review Fee

All Fire Service Sizes	\$695
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- c. Commodity rates within the City of Grand Rapids

Domestic	\$3.33 per 100 cubic feet
Commercial	\$3.33 per 100 cubic feet
Industrial	\$3.33 per 100 cubic feet

d. Monthly service charge within the City of Grand Rapids

Size of Meter	Charge
¾ inch or less	\$18.59
1 inch	\$30.27
1¼ inch	\$45.29
1½ inch	\$63.65
2 inches	\$110.38
3 inches	\$243.89
4 inches	\$430.80
6 inches or larger	\$964.85

e. Wastewater surcharges for industrial customers

BOD	\$0.278
TSS	\$0.466
Phos	\$2.449
NH3	\$0.264

f. Concentrated waste credit

BOD	\$0.116
Phos	\$5.252
NH3	\$0.041

g. Septage portable toilet waste

- i. Annual discharge authorization permit fee - \$500
- ii. \$100 per 1,000 gallons discharged

h. Hauled Concentrated Waste

- i. Annual discharge authorization permit fee for permitted significant industrial within the service area - \$1,000
- ii. Annual discharge authorization permit fee for customers outside the service areas - \$2,000

- iii. Waste stream characterization and compatibility evaluation -\$1,000 each
- iv. \$45 per 1,000 gallons discharged for customers within the service area
- v. \$60 per 1,000 gallons discharged for customers outside the service area
- i. Pumped or Hauled Municipal EQ Biosolids
  - i. \$1,500 annual discharge authorization permit fee
  - ii. \$1,000 each for Biosolids characterization and compatibility evaluation
  - iii. \$80 per dry ton discharged for customers within the service area
  - iv. \$100 per dry ton discharged for customers outside the service area
- j. Significant industrial user discharge permit fee - \$400 plus the surcharge analytical fees
- k. Surcharge analytical fees

Metals	\$7/each
TSS	\$7/each
BOD	\$14/each
Total Phosphate	\$13.50/each
pH	\$8/each
EPA 624	\$60/each
EPA 625	\$115/each
BTEX/MTBE	\$35/each
Sulfide	\$12/each
Oil and Grease	\$25/each
Total Cyanide	\$15/each
Hexavalent Chromium	\$10/each
Fecal Coliform	\$30/each
Mercury	\$15/each
Ammonia	\$9/each
PFAS EPA 537 Modified (samples, duplicate and blank)	\$900/each
Labor	\$64.34/hour
Sampler	\$35/day
Vehicle	\$4.28/hour

I. Sewer lateral charges

	50 ft.	60 ft.	66 ft.	80 ft.	100 ft.
	R.O.W.	R.O.W.	R.O.W.	R.O.W.	R.O.W.
Cost for 6 inch lateral	\$2,800	\$3,300	\$3,600	\$4,300	\$5,300

m. Sewer oversizing rates

Description	Amount (per lineal foot)
8 – 10 inches	\$4.43
8 – 12 inches	\$9.05
8 – 15 inches	\$17.51
10 – 12 inches	\$4.62
10 – 15 inches	\$13.08
12 – 15 inches	\$8.46

n. Footing drain disconnect opt out charge - \$73.04 per customer per month

3. That the above Water and Sewer rates, charges and fees are approved and shall be effective January 1, 2019.

I hereby certify that the foregoing is a true transcript of the action of the City Commission of the City of Grand Rapids, Michigan, in public session held December 18, 2018.



Joel H. Hondorp, City Clerk

**88389 Result: Adopted.**

**Mover: Jones. Supporter: Kelly.**

WHEREAS:

1. The Water/Sewer rate studies have been undertaken and completed for the years 1976 through 2017; and
2. The 2018 Water/Sewer Rate Review has been completed using the same general methodology as the 1976 through 2017 Water/Sewer Rate Studies, as adjusted where appropriate for the uniform water and sanitary sewer service agreements; therefore

RESOLVED:

1. That the attached water and sewer rates are approved for retail and wholesale partner communities of the City's Water Supply System and Sanitary Sewer System and shall be effective January 1, 2019; and
2. That the Fiscal Services Manager is directed to notify the contractual water and sewer service customers in writing of the water and sewer rates, and the Mayor and City Clerk are authorized to take any action as may be required to evidence the new water and sewer rates.

I hereby certify that the foregoing is a true transcript of the action of the City Commission of the City of Grand Rapids, Michigan, in public session held December 18, 2018.



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Joel H. Hondorp, City Clerk

# MEMORANDUM

CITY OF GRAND RAPIDS

**DATE:** December 18, 2018

**TO:** City of Grand Rapids Mayor and City Commissioners

**FROM:** Molly Eastman, Fiscal Services Manager

**SUBJECT:** 2018 Rate Study – City of Grand Rapids 20 Day Public Comment Period Comments and Answers

During the 2018 Water and Sewer Rate Study comment period, the City of Grand Rapids received the below comments. As indicated at the Committee of the Whole Preliminary Rate Study Presentation on November 13, 2018, all public comments received will be reviewed by staff and considered as part of the FY2020 budget planning process.

Friday, November 27, 2018:

**Customer Phone call to the Executive Office:**

I took a call from George Wheeler (717 9th Street NW 66-250-8313) this afternoon. He is a 60 year old Grand Rapids resident on a fixed income. He had several concerns that he wanted to share. They are listed below:

- For the Mayor – extremely upset about bikes not following the same rules as automobiles and recalls the police chief saying he would never ticket a bicyclist. He had lots of other comments about bikes in GR but safety was the primary concern he wanted to share with the Mayor.
- For his 1st ward commissioners – he attended a city commission meeting that was in the first ward last year and was not impressed. He expected to be able to talk to his commissioners. He does not have email and has cataracts so he is unable to attend city commission meetings. He also doesn't want to pay for parking (I explained we take care of that). His impression of City Hall is that we are not transparent and that we do not do anything worthwhile but raise rates (see next bullet).
- Concerned about the increase in water rates that he read about in the GR Press recently. See bullet 2
- Concerned about all the barriers to getting around his part of the city (due to construction near Alpine and Leonard).

*Response:*

*I called back George Wheeler on 11/29/18. A lot of his concern had to do with the newspaper article that implied the rate increase would cause his quarterly bill to go up by over \$200 a month. I explained it could have been explained better and that his quarterly bill is in fact only going up roughly \$6 a month.*

*He also wanted to make sure his commissioners were aware of his phone call and concerns. I explained to him that all communications received will be reported on December 18<sup>th</sup> at the Committee of the Whole and his comments left with the executive staff would be relayed as well.*

Monday, November 19, 2018:

**Email from Carmine Bosco:**

**From:** Carmine Bosco [<mailto:Bosco2041@comcast.net>]  
**Sent:** Monday, November 19, 2018 12:03 PM  
**To:** Customer Service Information Center <[csic1@grand-rapids.mi.us](mailto:csic1@grand-rapids.mi.us)>  
**Cc:** Carmine Bosco <[Bosco2041@comcast.net](mailto:Bosco2041@comcast.net)>  
**Subject:** Water & Sewer Rate hikes

Dear City Commission:

I am writing this email to protest the very significant rate increases for water and sewer delivery. I believe these increases are not justified for the following reasons:

- First of all the Departments of Water and Sewer have failed to deliver any significant cost savings or productivity gains in the normal competition of their duties in recent years.
- Secondly, residential customers are bearing an unfair burden of costs associated with the continuous expansion and upgrading of the system to accommodate developers of homes, apartments, buildings and mall areas. These developers and business have been granted excessively high releases from paying taxes.
- Also existing business such as Founder's Beer are imposing a significant capital expenditure for the system with the digester to accommodate the massive expansions of their businesses and business waste.. May I remind the commission these are extremely profitable businesses who need to pay a fairer share of the costs to accommodate their businesses
- These requested increases are in essence a "tax increase" on the citizens of the greater Grand Rapids community.
- Finally our Water and Sewage costs are really outrageous for a State so plentiful in water. I have lived in six other communities that had to either use wells or bring water in over 30 miles and their water and sewage rates were much lower.

Finally on a more personal note, I have called and left messages for the water department to see if it is possible to get a second meter for our residential home and NEVER have the CALLS been returned! Does anyone within the department care about the customer base?

I trust the Commission will do it's duty and vote down these ridiculous increases!. It is further compounded as you distribute the water to Cascade TWP. and they add on their little bit of profit to raise the prices even more and all they do is watch the water flow through the lines.

Sincerely;

Carmine Bosco  
2041 Tall Pines Dr. SE  
Grand Rapids, MI 49546  
616-575-0966

*Response:*

**From:** Eastman, Molly  
**Sent:** Wednesday, November 21, 2018 3:34 PM  
**To:** [Bosco2041@comcast.net](mailto:Bosco2041@comcast.net) <[Bosco2041@comcast.net](mailto:Bosco2041@comcast.net)>  
**Subject:** Response to email titled "Water & Sewer rate hikes"

Dear Carmine Bosco,

On behalf of the City Commission as well as the City of Grand Rapids, I would like to thank you for your email in response to the 2018 Preliminary Water and Sewer Rate Study. The feedback we receive is important and your letter as well as this response will be relayed to the Commission and the staff involved in delivery of water and sewer service. I will address your specific concerns from your letter below:

1. *"Water and Sewer have failed to deliver any significant cost savings or productivity gains in their duties in the normal competition of their duties in recent years."*

The water and sewer utilities have employed asset management tactics to replace old failing infrastructure strategically in recent years so that it would not cause large rate increases. Programs like removing lead materials from the Water System has been costly but it is necessary for the betterment of public health.

Looking specifically at operating expenses, the Water System spent nearly the same amount in 2018 relative to 2011. This is reflective of the saving achieved from initiatives like the SCADA system. SCADA, which stands for supervisory control and data acquisition, networks all infrastructure in the system like pumps to report back processing information immediately to the plant. It also allows a single operator at the plant to readily make adjustments or if necessary dispatch a team to repair the piece of infrastructure being monitored. This has proven to allow us to more effectively manage field operations staff so there isn't an interruption of service to the customer. Increase costs due to growth in the System in areas like Cascade or Grand Rapids Township have been offset largely from implementing new programs like this as well as being able to benefit from more users to spread-out overall costs.

2. *"Residential customers are bearing an unfair burden of costs associated with the continuous expansion and upgrading of the system to accommodate developers of homes, apartments, buildings and mall areas. These developers and business have been granted excessively high releases from paying taxes."*

I am unaware if you are speaking to a specific example, but I will say as the financial manager of the water and sanitary sewer system, no development or expansion is considered without proving it will provide benefit to the existing customer base. With growth, economies of scale happen where overhead costs get allocated across a larger customer base. More revenue is also generated with more customers so that can also maintain or drive down rates.

3. *"Also existing business such as Founder's Beer are imposing a significant capital expenditure for the system with the digester to accommodate the massive expansions of their businesses and business waste. May I remind the commission these are extremely profitable businesses who need to pay a fairer share of the costs to accommodate their businesses."*

The Water and Sanitary Sewer rate methodology is designed to be consistent and equitable. As explain in question #2, anything requiring financial investment of the System must be cost effective. Another layer of approval for any financing activity is the City Commission who appropriates the annual operating and capital budget as well as Utility Advisory Board who meet monthly to discuss

the Water and Sanitary Sewer operations. Every partner community has representation on this board including Cascade. Both the City Commission and the Utility Advisory Board are also open public forums.

Specifically concerning the Digester program, the Sanitary Sewer System is reaching a capacity level where plant expansion is necessary. When determining to go forward with the digester, all avenues were explored. A full plant expansion was estimated to cost significantly greater than implementing the bio-digestion program, with similar gains in productivity, therefore it was the most cost effective means of continuing to serve the customer base going forward. The Digester Program with the revenues anticipated from the sale of methane gas is currently estimated to have a positive impact on rates.

4. *"These requested increases are in essence a 'tax increase' on the citizens of the greater Grand Rapids community."*

The Water and Sanitary Sewer System is subject to federal and state requirements to ensure that rates are based on the cost of providing service and not a revenue generating exercise. The Michigan Supreme Court even developed a test for user charges in *Bolt v. City of Lansing* to define the difference between a user charge and a tax. The annual rate study for the Grand Rapids System is a thorough methodology which outlines the costs and revenues and is modeled to ensure all rates are accurate and defensible. This rate methodology has been in place since 1976.

5. *"...Water and Sewage cost are really outrageous for a State so plentiful in water. I have lived in six other communities that had to either use wells or bring water in over 30 miles and their water and sewage rates were much lower."*

The water and sanitary sewer service provided to the customer requires treatment. The source of the water for the Grand Rapids Water Utility is Lake Michigan. This is one of the cleanest sources but there is still treatment required before it can be transported and used by customers. The water rates in Grand Rapids are among the lowest in the State of Michigan including water systems that draw from underground aquifers.

6. *"I have called and left messages for the Water Department to see if it is possible to get a second meter for our residential home and NEVER have the CALLS been returned! Does anyone within the department care about the customer base?"*

I will personally call our utility business office and have someone contact you within 24 hours. I am sorry your messages were unanswered and will find out how that happened. If they do not contact you within the next day please email me and let me know. The utility business office strives to deliver excellent customer service so I appreciate your patience as we troubleshoot this issue.

7. *"I trust the Commission will do its duty and vote down these ridiculous increases! It is further compounded as you distribute water to Cascade TWP and they add on their little bit of profit to raise prices even more and all they do is watch the water flow through the lines."*

The Water and Sanitary Sewer Rates for the City of Grand Rapids and Partner Communities, including Cascade will be on the agenda as a resolution on December 18, 2018. This letter and my response will be given to the Commissioners. You are welcome to come to the meeting and participate as there is an open comment period.

Cascade is a retail customer so they do not have the ability to add on any type of profit to your bill. Per the response in question #4, it is illegal in the state of Michigan to inflict a user charge on customers for revenue generating purposes. They must be centered on cost recovery. The bill you receive for water or sanitary service is strictly based on what is outlined in the annual rate study.

Here is the path to the 2018 Preliminary Water and Sanitary Sewer Rate Study:

<https://www.grandrapidsmi.gov/Government/Departments/Water-System/Water-and-Sewer-Rate-Studies>

If you click on the link to the 2018 study you will also find a path to the Citizen's Guide. Both of these tools are also available in the City of Grand Rapids Clerk's Office.

I attached the presentation delivered to the Utility Advisory Board and the City Commission for your review. If you have further questions please let me know.

Thank you.

**Molly Eastman**  
**Fiscal Services Manager**  
City of Grand Rapids  
[meastman@grand-rapids.mi.us](mailto:meastman@grand-rapids.mi.us)

300 Monroe Ave NW  
Grand Rapids MI | 49503  
T: 616.456.3269 | F: 616.456.4655  
W: [grandrapidsmi.gov](http://grandrapidsmi.gov)

Monday, December 1, 2018:

**Letter from Richard C. Dalrymple:**

2019

WATER & SEWER BUDGET

DEC. 1, 2018

FEES & RATES

PUBLIC COMMENTS

ATTN. CITY CLERK'S OFFICE

ATTN: CITY COMMISSIONERS

WHO ARE THE CITY HALL ADVOCATES FOR THE GRD PPDS CITY RESIDENTS?  
DOES THE CITY MANAGER AGREE WITH "CITY STAFF" ON ITS BUDGET PROCESS FOR REVENUE FOR THE DEPARTMENT?

THE WATER & SEWER RATES HAVE INCREASED 140% SINCE THE YEAR 2000, AGAIN who is the watch DOG FOR THE CITIZENS.

THE NEW REPLACEMENT WATER & SEWER OLD PIPES IN THE STREETS STARTED LONG AGO IN THE 90'S THEY MUST BE PAID FOR BY NOW, WE HAD TO PAY LARGE FEES FOR THESE REPLACEMENTS, AFTER THE REPLACEMENT THE FEES WERE NEVER REDUCED AS THEY LED US TO BELIEVE WOULD HAPPEN HAVE PAYING OFF THE WORK.

WHY DON'T WE USE THE SPECTRUM OF REVENUE RESOURCES FOR WATER & SEWER IMPROVEMENTS THE CITY HAS.

WATER & SEWER SEEMS TO BE TREATED AS A HIRED CONTRACTOR NOT A PART OF THE CITY BUDGET PROCESS.

THE CITY HAS UNLIMITED AMOUNTS OF MONEY IN THE GENERAL FUND AND OR RAINY DAY FUNDS, LET'S FIND OUT WHO GIVES THE OK TO USE IT. e.g. THE GOVERNOR OF MICHIGAN HAS OVER A BILLION DOLLARS IN HIS FUND AVAILABLE.

SHOULD THE CITY OF GR ITS <sup>change</sup> POLICY REGARDING GENERAL FUND USAGE? WATER & SEWER DEPT. SHOULD BE ASKING FOR A LARGER GENERAL FUND APPROPRIATION, FOR ASSETS, INFRASTRUTURE IMPROVEMENTS, LEAD SERVICE REPLACEMENT, & LAKE MICH. WATER PLANT NOT ALWAYS GOING TO THE LOWLY WATER & SEWER CUSTOMER, WE PAID FOR THE WATER & SEWER WORK YEARS AGO. USE GENERAL FUND INCOME.

THE CITY COMMISSIONERS NEED TO PROTECT THE CITIZENS FROM UNFAIR COSTS TO THEM WHEN THE CITY ITSELF HAS THE FINANCES AVAILABLE TO USE.

HOW ABOUT THE BIODIGESTER PROJECT ONLY \$\$\$ 58,000,000 MILLION DOLLARS. USING REVENUE BONDS, FEDERAL GRANTS, AND MAINLY WATER CUSTOMERS.

THE CITY COMMISSIONERS MUST CONTINUETO PROTECT THE CITIZENS FROM UNFAIR COSTS TO THEM WHEN THE CITY, ITSELF HAS ALL THE RESOURCES TO COVER SAID COSTS. LETS NOT VOTE CARTE BLANCHE ON THESE ISSUES, DO YOUR DUTIES TO INVESTIGATE & HELP THE CITIZENS OF GRDPRS, BE AN ADVOCATE FOR US, THATS WHY WE VOTED FOR YOU.

THANK YOU, REGARDS

*Richard C. Dalrymple*

RICHARD C. DALRYMPLE  
2019 BRUNSINK NE  
GRAND RAPIDS MI 49503



**City of Grand Rapids**  
**Water and Sewer Customer Service**  
 (616) 456 - 3000

Customer Service  
 300 Monroe Avenue NW  
 Grand Rapids, MI 49503  
 2440036

Account Number	Bill Date	Due Date
WS2059457	11/20/18	12/11/18

Service Address
2019 BRUNSINK DR NE

Meter Reading		
Date	Type	Reading
Previous: 08/07/18	RR	53
Current: 11/06/18	RR	80

Service Type
Residential Quarterly - WATER, SEWER

Government Unit	Invoice
GRPDS	2059457

Days Billed: 91  
 Meter Change Units: 0  
 Metered Units Used: 27  
 Total Units Used: 27

**Summary of Charges**

Previous Balance		\$132.91	
Payment Received - Thank You		-\$140.00	
<b>Balance Before Current Charges</b>			-7.09
Current Charges			
Water Commodity Chg Grand Rapids	27 UNITS @ \$2.00	\$54.00	
Water Quarterly Base Grand Rapids		<u>\$30.39</u>	fee? extra charge
Sewer Qtr Winter Avg Grand Rapids	13 UNITS @ \$3.30	\$42.90	
Sewer Quarterly Base Grand Rapids		<u>\$51.85</u>	fee? " " "
<b>Total Current Charges</b>			<b>\$179.14</b>
			<b>\$172.05</b>

*2019 New 1.80? Base Fees \$82.24*

*Everything is installed + paid fee, till what does it cover?*

What's going on in Grand Rapids? Learn more about our great City by signing up for a free subscription to GRConnect, a monthly e-newsletter tailored specifically for each of our city's three wards. Sign-up today at [www.grandrapidsmi.gov/GRConnect](http://www.grandrapidsmi.gov/GRConnect)

*2 adults 80 + 79 years old, same house 40 years, water for gross now the rates need to go up didn't use enough?*

Past due accounts will be assessed a 10% late fee on the total current charges and applicable fees.

Return this portion with payment. Make checks payable to Grand Rapids City Treasurer.  
 If one of the payment options below is not received on or before the due date, your service is eligible for cutoff.



City of Grand Rapids Treasurer  
 RM 220 City Hall - Water/Sewer  
 300 Monroe Avenue NW  
 Grand Rapids MI 49503-2296

Bill Date	Due Date
11/20/18	12/11/18
Service Address	Account Number
2019 BRUNSINK DR NE	WS2059457
Total Amount Due	Monthly Option
\$172.05	\$52.62



111 1 AV 0.378 0103768-GRWS112846-GR.1GRP-030111  
 RICHARD DALRYMPLE  
 2019 BRUNSINK DR NE  
 GRAND RAPIDS MI 49503-2124

T:1



Amount Enclosed:

1808 00000020594570 00017205 00005262



## CITY OF GRAND RAPIDS

12/05/2018

Richard C. Dalrymple  
2019 Brunsink NE  
Grand Rapids, MI 49503

Dear Mr. Dalrymple,

Thank you for your letter in regards to the Water and Sewer Budget, Fees, and Rates. The City Commission received your letter at their meeting on December 4<sup>th</sup> and appreciate your feedback as it helps us better understand the community's concerns and helps us to get better at effectively communicating information about City services. I wanted to write you back to address some of your concerns before these rates are adopted for 2019.

The annual rate study is a comprehensive review of operating and capital costs of the Water and Sanitary Sewer Systems. The rate study methodology was first established in 1976 and yields consistent results in providing fair and equitable rates to the System users. I am unsure how you calculated a 140% rate increase since the year 2000 but I did pull some information of how System costs impact a Grand Rapids customer like you. For water service, the annual cost to maintain the City of Grand Rapids system was \$22.5 million in the year 2000. In the 2018 rate study, it is \$25.8 million which is a 15% increase over time. This is much smaller increase than would be expected during this time period and is indicative of the Water System being behind on asset replacement. This percentage also represents some savings achieved through employing innovative technology to improve operational efficiencies.

The Sewer system costs changes for the City of Grand Rapids have more of a history. In the year 2000, the cost was \$22.9 million while in the 2018 rate study it is \$37.5 million. This is a 64% increase. The sewer rates for the City of Grand Rapids grew dramatically because of the combined sewer overflow work that needed to occur per the DEQ requirements. There has been over \$300 million worth of work to reduce overflow frequency and volume which has helped river quality. This work was financed through the Sewer utility with bonds as well as State assisted financing which provided lower lending rates which both are paid back over time. The other main factor which increased the sewer costs was the loss of North Kent as part of the Sanitary Sewer System in 2008. North Kent accounted for over 10% of flow. With the loss of this usage, the System partner communities including the City of Grand Rapids had to compensate.

You make reference to using the general fund to supplement water and sewer rates. While this is an option the City could do, historically this has not been done. The general fund is not a guaranteed ongoing revenue source. With the general fund money being appropriated annually, water and sewer rate payers could be helped in one year, the next year however there may be economic or political factors that would eliminate this funding source. Losing that contribution could cause rate shock or a dramatic rate increase. Instead utilities like the Water and Sanitary Sewer System in Grand Rapids operate to be fiscally sustainable so their capital and operating costs can be supported by the revenues generated by the System and managed overtime to avoid dramatic increases and decreases in rates. It is in the interest of water and sewer rate payers to be removed from any political influence and remain financially self-sufficient.

The Biodigestion project was also mentioned as a huge cost that is being bore by rate payers. You are correct, this is a huge undertaking by the Sewer Utility. The biodigestion project came about when System managers were evaluating options for dealing with how to manage the utility with the treatment plant nearing capacity and would be in need of a costly expansion. The biodigestion project was chosen because it offered a more cost effective and creative solution for effectively dealing with waste. This includes a gas-to-energy project. Through sale of methane gas, the utility will be able to temper rates in the future.

Per your comments on your water and sewer bill, the commodity charge on your bill represents the necessary revenue needed to cover the costs related to System assets shared by all users regardless of location. An example of this would be the operation and maintenance of the sewer plant and the depreciation associated with those buildings. The other charge on your bill “Quarterly base” is another way of saying Monthly Service Charge. An example of this includes the infrastructure costs specific to the City of Grand Rapids as well as the cost to bill you as a customer. Cost associated with other customer communities like a watermain that specifically serves Cascade Township, are allocated to Cascade specifically and recognized in their Quarterly base charge.

Below, I laid out how your bill is calculated as well as how your bill will be calculated with the new rates for 2019:

Current Bill (11/20/18-12/11/18):

<b>Charges:</b>	<b>Units</b>	<b>Rate</b>	<b>Calculation</b>	<b>Total</b>
Water Commodity Charge	27 units	\$2.00 per unit	27 units x \$2.00	\$54.00
Water Quarterly Base Charge (Monthly Service Charge)		\$10.16 per month	\$10.16 x 12 months/365days x 91 days billed	\$30.39
Sewer Commodity Charge	13 units	\$3.30 per unit	13 units x \$3.30	\$42.90
Sewer Quarterly Base Charge (Monthly Service Charge)		\$17.33 per month	\$17.33 x 12 months/365 days x 91 days billed	\$51.85
			<b>Total Quarterly Bill</b>	<b>\$179.14</b>

Current Bill with 2019 anticipated rates:

Charges:	Units	Rate	Calculation	Total
Water Commodity Charge	27 units	\$1.98 per unit	27 units x \$1.98	\$53.46
Water Quarterly Base Charge (Monthly Service Charge)		\$10.94 per month	\$10.94 x 12 months/365days x 91 days billed	\$32.73
Sewer Commodity Charge	13 units	\$3.33 per unit	13 units x \$3.33	\$43.29
Sewer Quarterly Base Charge (Monthly Service Charge)		\$18.59 per month	\$18.59 x 12 months/365 days x 91 days billed	\$55.61
			<b>Total Quarterly Bill</b>	<b>\$185.09</b>

As you can see, the quarterly impact on your bill using the same usage assumption results in \$5.95 increase or \$1.98 per month.

The Water and Sanitary Sewer rates for 2019 are anticipated to be adopted on December 18, 2018 at the City Commission meeting. You are welcome to attend as well as the Utility Advisory Board meetings if you would like to participate more in the discussion regarding the management of water and sewer service in the City of Grand Rapids.

If you use a computer, you can access the 2018 Preliminary Water and Sanitary Sewer Rate Study: <https://www.grandrapidsmi.gov/Government/Departments/Water-System/Water-and-Sewer-Rate-Studies>

If you click on the link to the 2018 Study you will also find a path to the Citizen's Guide. Both of these tools are also available in the City of Grand Rapids Clerk's Office.

This letter will be shared with the City Commission so they are aware your concerns were addressed. Please let me know if I can provide any other information to help answer your questions.

Sincerely,



Molly J. Eastman  
Fiscal Services Manager  
616-456-3269  
meastman@grandrapids.mi.us