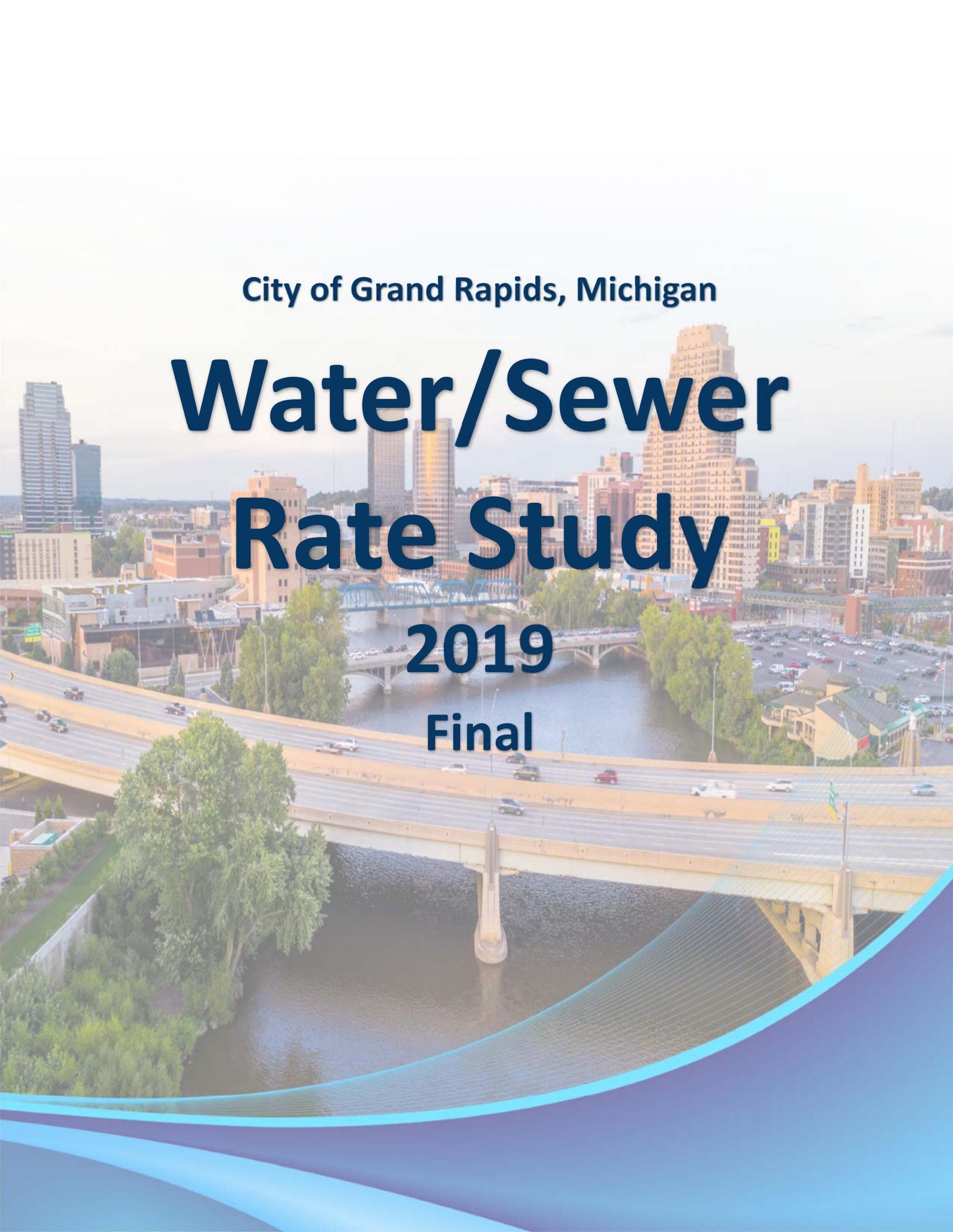


City of Grand Rapids, Michigan

Water/Sewer Rate Study 2019 Final



MEMORANDUM

CITY OF GRAND RAPIDS

DATE: January 1, 2020

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

FROM: Molly J. Clarin
Acting Chief Financial Officer

SUBJECT: 2019 WATER/SEWER RATE STUDY – FINAL REPORT

The final study, setting water and sewer rates effective January 1, 2020, 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 2019 review marked the 43rd annual water/sewer rate study report and resulted in utility rate increases as follows:

1. Water Supply System revenue requirements increased \$1,104,700, or 2.47% more than revenue generated by existing rates and charges.
2. Sewage Disposal System revenue requirements increased \$1,920,412 or 3.49% more than revenue generated by existing rates and charges, which includes a \$30M preload of assets related to the Biodigestion Project.

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 \$200,486 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 2020 water and sewer rates to the UAB partners and other customer communities was made November 14, 2019. 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 12, 2019, the preliminary rate study with explanatory materials were filed with the City Clerk, made available online at <https://www.grandrapidsmi.gov/Government/Departments/Water-System/Water-and-Sewer-Rate-Study>, 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 17, 2019.

Attachments as named

MJC: mjc

**CITY OF GRAND RAPIDS, MICHIGAN
2019 FINAL WATER/SEWER RATE STUDY
SUMMARY OF REVENUE REQUIREMENT CHANGES
FOR RATES EFFECTIVE JANUARY 1, 2020**

	<u>WATER (1)</u>		<u>SEWER (1)</u>	
	<u>AMOUNT</u>	<u>PERCENT</u>	<u>AMOUNT</u>	<u>PERCENT</u>
GRAND RAPIDS	\$ 862,102	3.29%	\$ 1,143,135	3.03%
WALKER	116,591	3.39%	188,979	3.99%
KENTWOOD	146,255	3.31%	172,433	3.99%
CASCADE TWP	24,176	0.63%	100,300	3.99%
GRAND RAPIDS TWP	83,041	3.44%	102,135	3.99%
TALLMADGE TWP	(28,207)	-11.73%	(45,081)	-9.25%
WRIGHT TWP	N/A	N/A	11,268	3.99%
EAST GRAND RAPIDS	(14,648)	-1.77%	98,137	11.94%
ADA TWP	10,696	0.83%	130,167	10.31%
OTTAWA COUNTY	(95,305)	-4.66%	NA	NA
GAINES TWP	N/A	N/A	542	0.26%
CALEDONIA TWP	N/A	N/A	18,397	12.77%
SYSTEM	\$ 1,104,700	2.47%	\$ 1,920,412	3.49%

(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)

	<u>WATER</u>		<u>SEWER</u>	
	<u>AMOUNT</u>	<u>PERCENT</u>	<u>AMOUNT</u>	<u>PERCENT</u>
SYSTEM REVENUE REQUIREMENT	\$ 45,752,997	2.47%	\$ 56,969,417	3.49%
ADD: CCCCB RELIEF	366,203	0.82%	278,102	0.51%
SYSTEM CHANGE- WITHOUT RELIEF	<u>\$ 46,119,200</u>	<u>3.29%</u>	<u>\$ 57,247,519</u>	<u>3.99%</u>

**CITY OF GRAND RAPIDS, MICHIGAN
2019 FINAL WATER/SEWER RATE STUDY
IMPACT OF RATE ADJUSTMENTS ON DOMESTIC USERS
BY CUSTOMER COMMUNITY *
FOR RATES EFFECTIVE JANUARY 1, 2020**

	<u>APPROXIMATE QUARTERLY BILL</u>		<u>CHANGE</u>	
	<u>2019</u>	<u>2020</u>	<u>DOLLARS</u>	<u>PERCENT</u>
GRAND RAPIDS				
WATER	\$ 86.28	\$ 89.28	\$ 3.00	3.48%
SEWER	119.04	122.20	3.16	2.65%
	<u>\$ 205.32</u>	<u>\$ 211.48</u>	<u>\$ 6.16</u>	3.00%
BASE RATIO	1.00	1.00		
WALKER				
WATER	\$ 85.32	\$ 88.44	\$ 3.12	3.66%
SEWER	133.55	138.99	5.44	4.07%
	<u>\$ 218.87</u>	<u>\$ 227.43</u>	<u>\$ 8.56</u>	3.91%
RATIO TO GR	1.07	1.08		
KENTWOOD				
WATER	\$ 87.48	\$ 90.81	\$ 3.33	3.81%
SEWER	73.22	76.44	3.22	4.40%
	<u>\$ 160.70</u>	<u>\$ 167.25</u>	<u>\$ 6.55</u>	4.08%
RATIO TO GR	0.78	0.79		
CASCADE TWP				
WATER	\$ 134.46	\$ 135.54	\$ 1.08	0.80%
SEWER	147.89	153.88	5.99	4.05%
	<u>\$ 282.35</u>	<u>\$ 289.42</u>	<u>\$ 7.07</u>	2.50%
RATIO TO GR	1.38	1.37		
GRAND RAPIDS TWP				
WATER	\$ 101.40	\$ 105.03	\$ 3.63	3.58%
SEWER	129.28	134.53	5.25	4.06%
	<u>\$ 230.68</u>	<u>\$ 239.56</u>	<u>\$ 8.88</u>	3.85%
RATIO TO GR	1.12	1.13		
TALLMADGE TWP				
WATER	\$ 110.61	\$ 93.96	\$ (16.65)	-15.05%
SEWER	282.06	256.82	(25.24)	-8.95%
	<u>\$ 392.67</u>	<u>\$ 350.78</u>	<u>\$ (41.89)</u>	-10.67%
RATIO TO GR	1.91	1.66		

* 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

WRIGHT TWP-				
SEWER (No. of REU 1.00)	<u>\$ 167.10</u>	<u>\$ 173.76</u>	<u>\$ 6.66</u>	3.99%

**CITY OF GRAND RAPIDS, MICHIGAN
2019 FINAL WATER/SEWER RATE STUDY
IMPACT OF RATE ADJUSTMENTS ON COMMERCIAL USERS
BY CUSTOMER COMMUNITY
FOR RATES EFFECTIVE JANUARY 1, 2020**

	<u>APPROXIMATE QUARTERLY BILL</u>		<u>CHANGE</u>	
	<u>2019</u>	<u>2020</u>	<u>DOLLARS</u>	<u>PERCENT</u>
GRAND RAPIDS				
WATER	\$ 479.37	\$ 494.16	\$ 14.79	3.09%
SEWER	790.11	839.13	49.02	6.20%
	<u>\$ 1,269.48</u>	<u>\$ 1,333.29</u>	<u>\$ 63.81</u>	5.03%
BASE RATIO	1.00	1.00		
WALKER				
WATER	\$ 430.34	\$ 445.37	\$ 15.03	3.49%
SEWER	676.71	703.35	26.64	3.94%
	<u>\$ 1,107.05</u>	<u>\$ 1,148.72</u>	<u>\$ 41.67</u>	3.76%
RATIO TO GR	0.87	0.86		
KENTWOOD				
WATER	\$ 413.90	\$ 427.60	\$ 13.70	3.31%
SEWER	585.30	608.01	22.71	3.88%
	<u>\$ 999.20</u>	<u>\$ 1,035.61</u>	<u>\$ 36.41</u>	3.64%
RATIO TO GR	0.79	0.78		
CASCADE TWP				
WATER	\$ 637.69	\$ 642.33	\$ 4.64	0.73%
SEWER	723.33	752.73	29.40	4.06%
	<u>\$ 1,361.02</u>	<u>\$ 1,395.06</u>	<u>\$ 34.04</u>	2.50%
RATIO TO GR	1.07	1.05		
GRAND RAPIDS TWP				
WATER	\$ 496.11	\$ 513.73	\$ 17.62	3.55%
SEWER	640.92	665.46	24.54	3.83%
	<u>\$ 1,137.03</u>	<u>\$ 1,179.19</u>	<u>\$ 42.16</u>	3.71%
RATIO TO GR	0.90	0.88		
TALLMADGE TWP				
WATER	\$ 759.23	\$ 661.36	\$ (97.87)	-12.89%
SEWER	2,232.42	2,026.53	(205.89)	-9.22%
	<u>\$ 2,991.65</u>	<u>\$ 2,687.89</u>	<u>\$ (303.76)</u>	-10.15%
RATIO TO GR	2.36	2.02		

* THE COMPARISONS ABOVE ARE BASED ON SYSTEM AVERAGE COMMERCIAL CUSTOMER
QUARTERLY CONSUMPTION OF : WATER- 217.00 UNITS OR 162,316 GALLONS
SEWER - 210.00 UNITS OR 157,080 GALLONS
NO. OF MONTHS: 3

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

WRIGHT TWP				
SEWER (No. of REU 1.00)	<u>\$ 167.10</u>	<u>\$ 173.76</u>	<u>\$ 6.66</u>	3.99%

**CITY OF GRAND RAPIDS, MICHIGAN
2019 FINAL WATER/SEWER RATE STUDY
WATER & SEWER RATES FOR GRAND RAPIDS & RETAIL CUSTOMER COMMUNITIES
EFFECTIVE JANUARY 1, 2020**

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)		\$ 2.04	\$ 1.76	\$ 1.63	\$ 2.43	\$ 1.99	\$ 2.98	NA
MONTHLY SERVICE CHARGE BY METER SIZE								
3/4" & Less	A	\$ 11.40	\$ 13.64	\$ 15.60	\$ 23.31	\$ 17.10	\$ 4.50	NA
1"	B	\$ 17.16	\$ 21.15	\$ 24.63	\$ 38.34	\$ 27.30	\$ 4.90	NA
1-1/4"	C	\$ 24.57	\$ 30.80	\$ 36.24	\$ 57.66	\$ 40.41	\$ 5.41	NA
1-1/2"	D	\$ 33.63	\$ 42.59	\$ 50.43	\$ 81.27	\$ 56.43	\$ 6.03	NA
2"	E	\$ 56.68	\$ 72.61	\$ 86.55	\$ 141.38	\$ 97.22	\$ 7.62	NA
3"	F	\$ 122.55	\$ 158.39	\$ 189.75	\$ 313.11	\$ 213.75	\$ 12.15	NA
4"	G	\$ 214.76	\$ 278.48	\$ 334.23	\$ 553.54	\$ 376.90	\$ 18.50	NA
6" & Over	H	\$ 478.23	\$ 621.59	\$ 747.03	\$ 1,240.47	\$ 843.03	\$ 36.63	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)		\$ 3.58	\$ 2.64	\$ 2.73	\$ 2.77	\$ 2.47	\$ 8.96	NA
REU Charge (Monthly) *		NA	NA	NA	NA	NA	NA	\$ 57.92
MONTHLY SERVICE CHARGE BY METER SIZE								
3/4" & Less	A	\$ 18.06	\$ 29.61	\$ 8.19	\$ 33.75	\$ 29.20	\$ 28.86	NA
1"	B	\$ 29.11	\$ 49.65	\$ 11.57	\$ 57.01	\$ 48.92	\$ 48.31	NA
1-1/4"	C	\$ 43.32	\$ 75.41	\$ 15.91	\$ 86.91	\$ 74.27	\$ 73.32	NA
1-1/2"	D	\$ 60.69	\$ 106.89	\$ 21.21	\$ 123.45	\$ 105.25	\$ 103.89	NA
2"	E	\$ 104.90	\$ 187.03	\$ 34.71	\$ 216.47	\$ 184.12	\$ 181.70	NA
3"	F	\$ 231.21	\$ 416.01	\$ 73.29	\$ 482.25	\$ 409.45	\$ 404.01	NA
4"	G	\$ 408.04	\$ 736.58	\$ 127.30	\$ 854.34	\$ 724.92	\$ 715.24	NA
6" & Over	H	\$ 913.29	\$ 1,652.49	\$ 281.61	\$ 1,917.45	\$ 1,626.25	\$ 1,604.49	NA

* REU - Residential Equivalent Unit (Wright Township Only)

FIRE PROTECTION RATES- ALL GOVERNMENTAL UNITS

6"	H	\$ 19.60		10"	J	\$ 54.50
8"	I	\$ 34.79		12"	K	\$ 78.42

NOTE: Monthly defined as 1/12th of 366 days.

**CITY OF GRAND RAPIDS, MICHIGAN
2019 FINAL WATER/SEWER RATE STUDY
IMPACT OF RATE ADJUSTMENTS ON WHOLESALE CUSTOMER COMMUNITIES
EFFECTIVE JANUARY 1, 2020**

	<u>2019</u>	<u>2020</u>	<u>PERCENTAGE CHANGE</u>
EAST GRAND RAPIDS			
WATER - SERVICE (MONTHLY)	\$17,209.00	\$17,849.00	3.72%
- COMMODITY (100 CF)	\$1.11	\$1.07	-3.60%
SEWER - SERVICE (MONTHLY)	\$2,243.00	\$2,213.00	-1.34%
- COMMODITY (MG)	\$1,840.00	\$2,068.00	12.39%
ADA TWP			
WATER - SERVICE	\$42,811.00	\$45,244.00	5.68%
- COMMODITY	\$1.25	\$1.22	-2.40%
SEWER - SERVICE	\$46,008.00	\$47,747.00	3.78%
- COMMODITY	\$2,358.00	\$2,721.00	15.39%
OTTAWA COUNTY			
WATER - SERVICE	\$445.00	\$0.00	-100.00%
- COMMODITY	\$1.19	\$1.14	-4.20%
GAINES TWP			
SEWER - SERVICE	\$1,605.00	\$1,631.00	1.62%
- COMMODITY	\$1,668.00	\$1,670.00	0.12%
CALEDONIA TWP			
SEWER - SERVICE	\$752.00	\$739.00	-1.73%
- COMMODITY	\$4,497.00	\$5,115.00	13.74%

NOTE: Monthly defined as 1/12th of 366 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, 2019
TASKS NO. 1, 2, & 3**

COMMUNITY	LOCAL		INTERMEDIATE		PRIMARY		TOTALS	
	FEET	MILES	FEET	MILES	FEET	MILES	FEET	MILES
Grand Rapids								
Construction	12,847	2.43	8,082	1.53	146	0.03	21,075	3.99
Abandonment	(17,285)	(3.27)	(4,932)	(0.93)	(680)	(0.13)	(22,897)	(4.33)
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
	(4,438)	(0.84)	3,150	0.60	(534)	(0.10)	(1,822)	(0.34)
Kentwood								
Construction	1,744	0.33	5,298	1.00	0	0.00	7,042	1.33
Abandonment	0	0.00	0	0.00	0	0.00	0	0.00
	1,744	0.33	5,298	1.00	0	0.00	7,042	1.33
Cascade 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
	0	0.00	0	0.00	0	0.00	0	0.00
G.R. Twp.								
Construction	83	0.02	2,586	0.49	0	0.00	2,669	0.51
Abandonment	0	0.00	0	0.00	0	0.00	0	0.00
	83	0.02	2,586	0.49	0	0.00	2,669	0.51
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
	0	0.00	0	0.00	0	0.00	0	0.00
Walker								
Construction	15	0.00	410	0.08	0	0.00	425	0.08
Abandonment	0	0.00	0	0.00	0	0.00	0	0.00
	15	0.00	410	0.08	0	0.00	425	0.08
TOTAL	(2,596)	(0.49)	11,444	2.17	(534)	(0.10)	8,314	1.58

	CONTRIBUTIONS		
	COMM	OTHER	TOTAL
Integrated	\$ 18,089	\$ -	\$ 18,089
Grand Rapids	514,431	-	514,431
Walker	-	-	-
Kentwood	-	-	-
Cascade Twp.	436,113	-	436,113
Grand Rapids Twp.	803,477	-	803,477
Tallmadge Twp.	328,579	-	328,579
TOTAL	\$ 2,100,689	\$ -	\$ 2,100,689

CITY OF GRAND RAPIDS, MICHIGAN
 WATER SUPPLY SYSTEM FUND
 OPERATING EXPENSE ALLOCATION BY COST CENTER - TASK #4, PART 1
 FISCAL YEAR ENDED JUNE 30, 2019

	ACTIVITY	EXPENSE BY ACTIVITY	PUMPING STATIONS			WATERMAINS			RETAIL CUSTOMER METERING	ENGIN. SERVICES	ADMIN. EXPENSE
			FILTRATION PLANT	PRIMARY	INTERM.	PRIMARY TRANSPORT	INTERMED. TRANSPORT	LOCAL DISTRIBUTION			
253 (4010) 5910	TREASURER-CUSTOMER SERVICE	\$ 824,618						\$ 824,618			
536 (2110) 2700 5910	WATER-CUSTOMER SERVICE *	2,933,922						2,933,922			
536 (3010:70) 5910	ENGINEERING	1,148,499							1,148,499		
536 (4510:80) 5910	COLDBROOK DISTRIBUTION	2,542,169		691,783	1,850,386						
536 (6010 / 6370) 5910	FIELD OPERATIONS	7,097,746		363,334	1,868,482						
536 (6500:90) 5910	FILTRATION	7,218,392	7,218,392								
536 (1000:10 / 8000) 5910	SUBTOTAL OPERATING EXPENSE ADMINISTRATION	21,765,347	7,218,392	691,783	1,850,386	363,334	1,868,482	3,758,540	1,148,499	-	
	TOTAL	\$ 26,323,115	\$ 7,218,392	\$ 691,783	\$ 1,850,386	\$ 363,334	\$ 1,868,482	\$ 3,758,540	\$ 1,148,499	\$ 4,557,769	

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

METHOD OF DISTRIBUTION

253 (4010) 5910	TREASURER-CUSTOMER SERVICE	100.000%						100.000%		
536 (2110) 2700 5910	WATER-CUSTOMER SERVICE	100.000%						100.000%		
536 (3010:70) 5910	ENGINEERING	100.000%							100.000%	
536 (4510:80) 5910	COLDBROOK DISTRIBUTION	100.000%		27.210%	72.790%					
536 (6010 / 6370) 5910	FIELD OPERATIONS	100.000%		5.119%	26.325%			68.556%		
536 (6500:90) 5910	TOTAL MILES OF MAIN	1,186.67		60.74	312.39			813.54		
536 (1000:10 / 8000) 5910	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, 2019

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	\$ 7,218,392	\$ 7,218,392												
PUMPING STATIONS:														
A. PRIMARY TRANSPORT	691,783	691,783												
B. INTERMEDIATE TRANSPORT	1,850,386		1,528,008	17,889	304,489	-	-	-	-	-	-	-	-	-
WATERMAINS:														
A. PRIMARY TRANSPORT	363,334		301,066	19,260	27,395	10,050	5,563							
B. INTERMEDIATE TRANSPORT	1,868,482		703,278	397,389	335,374	252,282	153,533	26,626						
C. LOCAL DISTRIBUTION	4,865,930		3,555,243	383,776	334,825	269,864	304,023	18,199						
RETAIL CUSTOMER METERING	3,758,540		2,796,241	307,336	258,099	177,854	205,592	13,418						
SUBTOTAL OPERATING EXPENSE	20,616,848	7,910,175	8,883,836	1,125,650	1,260,182	710,050	668,711	58,243						
ENGINEERING SERVICES	1,148,499	440,646	494,888	62,708	70,196	39,554	37,257	3,250						
ADMINISTRATIVE EXPENSE	4,557,769	1,726,360	1,997,049	245,678	275,015	154,966	145,967	12,734						
TOTAL	\$ 26,323,115	\$ 10,077,181	\$ 11,375,773	\$ 1,434,036	\$ 1,605,393	\$ 904,570	\$ 851,935	\$ 74,227	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
METHOD OF DISTRIBUTION														
FILTRATION PLANTS	100.00%	100.00%												
PUMPING STATIONS														
A. PRIMARY TRANSPORT	100.00%	100.00%												
B. INTERMEDIATE TRANSPORT	100.00%		82.578%	0.967%	16.455%									
MEMO														
WATERMAINS														
TOTAL MILES:	1,186.67													
A. PRIMARY TRANSPORT			82.862%	5.301%	7.540%	2.766%	1.531%							
MILES	60.74		50.33	3.22	4.58	1.68	0.93							
B. INTERMEDIATE TRANSPORT			37.639%	21.268%	17.949%	13.502%	8.217%	1.425%						
MILES	312.39		117.58	66.44	56.07	42.18	25.67	4.45						
C. LOCAL DISTRIBUTION			73.064%	7.887%	6.881%	5.546%	6.248%	0.374%						
MILES	813.54		594.41	64.16	55.98	45.12	50.83	3.04						
RETAIL CUSTOMER METERING (1)			74.397%	8.177%	6.867%	4.732%	5.470%	0.357%						
NUMBER OF METERS	80,037.00		59,545.00	6,545.00	5,496.00	3,787.00	4,378.00	286.00						
ENGINEERING SERVICES (2)			43.090%	5.460%	6.112%	3.444%	3.244%	0.283%						
ADMINISTRATIVE EXPENSE (3)			43.816%	5.390%	6.034%	3.400%	3.203%	0.279%						

NOTES:
 (1) ALLOCATION BASED ON NUMBER OF METERS.
 (2) ALLOCATION BASED ON DIRECT OPERATING EXPENSE.
 (3) ALLOCATION BASED ON 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, 2019

	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	\$ 877,316					\$ 877,316		
536 (2110) 2700) 5910	WATER-CUSTOMER SERVICE *	2,821,609					2,821,609		
536 (3010:70) 5910	ENGINEERING	1,175,209						1,175,209	
536 (4510:80) 5910	COLDBROOK DISTRIBUTION	2,561,672		697,090	1,864,582				
536 (6010) 6370) 5910	FIELD OPERATIONS	7,194,118		368,267	1,893,852	4,931,999			
536 (6500:90) 5910	FILTRATION	7,258,006	7,258,006						
536 (1000:10) 8000) 5910	SUBTOTAL OPERATING EXPENSE ADMINISTRATION	21,887,930	7,258,006	697,090	1,864,582	4,931,999	3,698,925	1,175,209	-
	TOTAL	\$ 26,296,991	\$ 7,258,006	\$ 697,090	\$ 1,864,582	\$ 4,931,999	\$ 3,698,925	\$ 1,175,209	\$ 4,409,061

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

METHOD OF DISTRIBUTION

253 (4010) 5910	TREASURER-CUSTOMER SERVICE	100.000%					100.000%		
536 (2110) 2700) 5910	WATER-CUSTOMER SERVICE	100.000%					100.000%		
536 (3010:70) 5910	ENGINEERING	100.000%						100.000%	
536 (4510:80) 5910	COLDBROOK DISTRIBUTION	100.000%		27.210%	72.790%				
536 (6010) 6370) 5910	FIELD OPERATIONS	100.000%		5.119%	26.325%	68.556%			
536 (6500:90) 8000) 5910	TOTAL MILES OF MAIN	1,186.67		60.74	312.39	813.54			
	FILTRATION	100.000%	100.000%						
	ADMINISTRATION	100.000%							100.000%

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, 2019

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	\$ 7,258,006	\$ 7,258,006												
PUMPING STATIONS:														
A. PRIMARY TRANSPORT	697,090	697,090												
B. INTERMEDIATE TRANSPORT	1,864,582		1,539,730	18,027	306,825									
WATERMAINS:														
A. PRIMARY TRANSPORT	368,267		305,154	19,522	27,767		10,186	5,638						
B. INTERMEDIATE TRANSPORT	1,893,852		712,828	402,784	339,927		255,708	155,618		26,987				
C. LOCAL DISTRIBUTION	4,931,999		3,603,515	388,987	339,371		273,529	308,151		18,446				
RETAIL CUSTOMER METERING	3,698,925		2,751,890	302,461	254,005		175,033	202,331		13,205				
SUBTOTAL OPERATING EXPENSE	20,712,721	7,955,096	8,913,117	1,131,781	1,267,895		714,456	671,738		58,638				
ENGINEERING SERVICES	1,175,209	451,374	505,716	64,213	71,935		40,533	38,112		3,326				
ADMINISTRATIVE EXPENSE	4,409,061	1,671,089	1,930,448	237,732	266,318		150,062	141,099		12,313				
TOTAL	\$ 26,296,991	\$ 10,077,558	\$ 11,349,281	\$ 1,433,726	\$ 1,606,148		\$ 905,051	\$ 850,949		\$ 74,277				\$ -
METHOD OF DISTRIBUTION														
FILTRATION PLANTS	100.00%													
PUMPING STATIONS														
A. PRIMARY TRANSPORT	100.00%													
B. INTERMEDIATE TRANSPORT	100.00%		82.578%	0.967%	16.455%									
MEMO														
WATERMAINS														
TOTAL MILES:			1,186.67											
A. PRIMARY TRANSPORT	100.0000%		82.862%	5.301%	7.540%		2.766%	1.531%						
MILES			50.33	3.22	4.58		1.68	0.93						
B. INTERMEDIATE TRANSPORT	100.0000%		37.639%	21.268%	17.949%		13.502%	8.217%		1.425%				
MILES			117.58	66.44	56.07		42.18	25.67		4.45				
C. LOCAL DISTRIBUTION	100.0000%		73.064%	7.887%	6.881%		5.546%	6.248%		0.374%				
MILES			594.41	64.16	55.98		45.12	50.83		3.04				
RETAIL CUSTOMER METERING (1)	100.0000%		74.397%	8.177%	6.867%		4.732%	5.470%		0.357%				
NUMBER OF METERS			59,545.00	6,545.00	5,496.00		3,787.00	4,378.00		286.00				
ENGINEERING SERVICES (2)	100.0000%		43.032%	5.464%	6.121%		3.449%	3.243%		0.283%				
ADMINISTRATIVE EXPENSE (3)	100.0000%		43.784%	5.392%	6.040%		3.403%	3.200%		0.279%				

NOTES:
(1) ALLOCATION BASED ON NUMBER OF METERS.
(2) ALLOCATION BASED ON DIRECT OPERATING EXPENSE.
(3) ALLOCATION BASED ON 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, 2019
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	\$ 524,409.45	\$ 17,725.04	\$ 542,134.49
7040	TEMPORARY EMPLOYEES	14,546.30	491.66	15,037.96
7055	TIME & ONE-HALF	106.57	3.60	110.17
7105	EMPLOYERS SOCIAL SECURITY	37,658.15	1,272.85	38,931.00
7110	HOSPITALIZATION INSURANCE	98,991.86	11,819.63	110,811.49
7115	RETIREE HEALTH CARE	64,224.96	(17,860.96)	46,364.00
7120	RETIREMENT FUND CONTRIBUTION	119,115.70	4,979.04	124,094.74
7135	UNEMPLOYMENT COMPENSATION	1,241.20	-	1,241.20
7175	FOOD/CLEAN/CAR ALLOW	2,490.00	-	2,490.00
	TOTAL PERSONAL SERVICES	<u>862,784.19</u>	<u>18,430.86</u>	<u>881,215.05</u>
7520	SUPPLIES	3,711.03	-	3,711.03
7670	CLOTHING/CLEANING ALLOWANCE	69.51	-	69.51
	TOTAL SUPPLIES	<u>3,780.54</u>	<u>-</u>	<u>3,780.54</u>
6931	GAIN-LOSS ON SALE OF ASSETS-FA	(17,732.65)	-	(17,732.65)
7910	SUBSCRIPTIONS AND PUBLICATIONS	277.72	-	277.72
8010	CONTRACTUAL SERVICES	156,172.30	-	156,172.30
8011	CONTRACT EMPLOYEES - TEMP SERVICES	24,573.80	-	24,573.80
8015	CONTRACT SERV-TRAINING	4,061.55	-	4,061.55
8030	ADMINISTRATIVE SERVICES (ICB)	99,157.63	(99,157.63)	-
8240	FEES	29,752.20	-	29,752.20
8400	INSURANCE PREMIUMS	255,108.00	43,545.00	298,653.00
8450	GENERAL LIABILITY INSURANCE/CLAIMS	253,013.00	23,714.00	276,727.00
8500	TELEPHONE	4,768.77	-	4,768.77
9000	PRINTING & PUBLISHING	5,002.71	-	5,002.71
9010	ADVERTISING - ANY MEDIA	5,067.45	-	5,067.45
9100	PROFESSIONAL DEVELOPMENT	27,574.69	-	27,574.69
9110	OTHER TRAVEL & TRAINING	28,047.94	-	28,047.94
9130	LOCAL BUSINESS EXPENSE	235.91	-	235.91
9150	MEMBERSHIPS	62,599.33	-	62,599.33
9180	WATER	3,277.41	-	3,277.41
9200	ELECTRICITY	54,841.93	-	54,841.93
9210	NATURAL GAS	19,623.62	-	19,623.62
9340	MAINTENANCE SERVICE	39,786.73	-	39,786.73
9400	LAND RENTAL OR LEASE	4,979.82	-	4,979.82
9410	EQUIPMENT RENTALS OR LEASE	240.21	-	240.21
9430	BUILDINGS RENTALS OR LEASE	5,848.80	-	5,848.80
9460	ENGINEERING SERVICES	27,958.17	-	27,958.17
9470	VEHICLE USAGE/CAR MILEAGE	6,107.30	-	6,107.30
9480	COMPUTER SERVICES	26,204.04	2,528.96	28,733.00
9650	BAD DEBT WRITE-OFFS	88.91	-	88.91
	TOTAL OTHER SERVICES & CHARGES	<u>1,126,637.29</u>	<u>(29,369.67)</u>	<u>1,097,267.62</u>
9760	EQUIPMENT	58,394.90	-	58,394.90
9840	SOFTWARE	(1,713.28)	-	(1,713.28)
9880	CONSTRUCTION IN PROGRESS	1,551,653.89	-	1,551,653.89
	TOTAL CAPITAL	<u>1,608,335.51</u>	<u>-</u>	<u>1,608,335.51</u>
9510	A-87 COST ALLOCATION	956,231.00	(137,769.00)	818,462.00
	TOTAL TRANSFERS/FEES	<u>956,231.00</u>	<u>(137,769.00)</u>	<u>818,462.00</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 4,557,768.53</u>	<u>\$ (148,707.81)</u>	<u>\$ 4,409,060.72</u>

**CITY OF GRAND RAPIDS, MICHIGAN
WATER SUPPLY SYSTEM FUND
ADJUSTED ACTUAL EXPENSE
YEAR ENDED JUNE 30, 2019
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: CUSTOMER SERVICES

EXPENDITURE SUB-OBJECT		OPERATING	ADJUSTED	ADJUSTED
OBJ	DESCRIPTION	EXPENSES	COST	CURRENT
			FACTORS	ANNUAL
				EXPENSES
7020	PERMANENT EMPLOYEES	\$ 1,457,025.48	\$ 49,247.46	\$ 1,506,272.94
7025	ACT.ASSIGNMENT	6,320.56	213.63	6,534.19
7050	REGULAR HOURLY RATE	252.08	8.52	260.60
7055	TIME & ONE-HALF	106,843.96	3,611.33	110,455.29
7105	EMPLOYERS SOCIAL SECURITY	108,041.32	3,651.80	111,693.12
7110	HOSPITALIZATION INSURANCE	422,549.74	50,452.44	473,002.18
7115	RETIREE HEALTH CARE	176,651.30	(49,126.73)	127,524.57
7120	RETIREMENT FUND CONTRIBUTION	324,829.87	13,577.89	338,407.76
7135	UNEMPLOYMENT COMPENSATION	1,970.52	-	1,970.52
7165	SHIFT DIFFERENTIAL	1,231.23	-	1,231.23
	TOTAL PERSONAL SERVICES	<u>2,605,716.06</u>	<u>71,636.34</u>	<u>2,677,352.40</u>
7520	SUPPLIES	1,047,470.23	428,170.00	1,475,640.23
7670	CLOTHING/CLEANING ALLOWANCE	3,430.77	-	3,430.77
8510	POSTAGE	9,520.26	-	9,520.26
	TOTAL SUPPLIES	<u>1,060,421.26</u>	<u>428,170.00</u>	<u>1,488,591.26</u>
8010	CONTRACTUAL SERVICES	902,996.53	-	902,996.53
8011	CONTRACT EMPLOYEES - TEMP SERVICES	58,144.73	-	58,144.73
8500	TELEPHONE	15,570.12	-	15,570.12
9100	PROFESSIONAL DEVELOPMENT	13,051.14	-	13,051.14
9110	OTHER TRAVEL & TRAINING	606.00	-	606.00
9340	MAINTENANCE SERVICE	1,790.21	-	1,790.21
9410	EQUIPMENT RENTALS OR LEASE	11,025.52	-	11,025.52
9440	FLEET MANAGEMENT EQUIPMENT	166,776.51	-	166,776.51
9450	311 CALL CENTER SERVICES	575,516.00	-	575,516.00
9470	VEHICLE RENTAL/CAR MILEAGE	12,027.23	-	12,027.23
9480	COMPUTER SERVICES	122,418.00	11,810.00	134,228.00
9480	COMPUTER SERVICES (CIS-DEPR & ROI)	-	200,448.00	200,448.00
9650	BAD DEBT WRITE-OFFS	(285.60)	-	(285.60)
	TOTAL OTHER SERVICES & CHARGES	<u>1,879,636.39</u>	<u>212,258.00</u>	<u>2,091,894.39</u>
9760	EQUIPMENT	2,455.54	-	2,455.54
9800	FURNITURE	3,124.00	-	3,124.00
9840	SOFTWARE	2,815.45	-	2,815.45
	TOTAL CAPITAL	<u>8,394.99</u>	<u>-</u>	<u>8,394.99</u>
9510	A-87 COST ALLOCATION	44,512.00	(4,287.00)	40,225.00
	TOTAL TRANSFERS/FEES	<u>44,512.00</u>	<u>(4,287.00)</u>	<u>40,225.00</u>
	ORGANIZATIONAL UNIT TOTAL (GROSS)	\$ 5,598,680.70	\$ 707,777.34	\$ 6,306,458.04
	LESS: SDSF CONTRIBUTION *	(2,664,759.00)	(820,089.69)	(3,484,848.69)
	ORGANIZATIONAL UNIT TOTAL (NET)	<u>\$ 2,933,921.70</u>	<u>\$ (112,312.35)</u>	<u>\$ 2,821,609.35</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, 2019
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	\$ 564,173.53	\$ 19,069.07	\$ 583,242.60
7025	ACT.ASSIGNMENT	284.00	9.60	293.60
7040	TEMPORARY EMPLOYEES	17,893.15	604.79	18,497.94
7055	TIME & ONE-HALF	2,708.06	91.53	2,799.59
7105	EMPLOYERS SOCIAL SECURITY	42,596.28	1,439.75	44,036.03
7110	HOSPITALIZATION INSURANCE	121,401.33	14,495.32	135,896.65
7115	RETIREE HEALTH CARE	67,757.06	(18,843.24)	48,913.82
7120	RETIREMENT FUND CONTRIBUTION	124,592.57	5,207.97	129,800.54
7135	UNEMPLOYMENT COMPENSATION	1,431.33	-	1,431.33
	TOTAL PERSONAL SERVICES	<u>942,837.31</u>	<u>22,074.79</u>	<u>964,912.10</u>
7520	SUPPLIES	2,383.25	-	2,383.25
7670	CLOTHING/CLEANING ALLOWANCE	603.68	-	603.68
	TOTAL SUPPLIES	<u>2,986.93</u>	<u>-</u>	<u>2,986.93</u>
8010	CONTRACTUAL SERVICES	85,403.96	-	85,403.96
8011	CONTRACT EMPLOYEES - TEMP SERVICES	9,229.93	-	9,229.93
8500	TELEPHONE	3,447.60	-	3,447.60
9340	MAINTENANCE SERVICE	601.24	-	601.24
9410	EQUIPMENT RENTALS OR LEASE	8,901.39	-	8,901.39
9440	FLEET MANAGEMENT EQUIPMENT	20,243.98	-	20,243.98
9460	ENGINEERING SERVICES	1,978.12	-	1,978.12
9470	VEHICLE RENTAL/CAR MILEAGE	600.00	-	600.00
9480	COMPUTER SERVICES	48,041.04	4,634.96	52,676.00
	TOTAL OTHER SERVICES & CHARGES	<u>178,447.26</u>	<u>4,634.96</u>	<u>183,082.22</u>
9760	EQUIPMENT	2,640.40	-	2,640.40
	TOTAL CAPITAL	<u>2,640.40</u>	<u>-</u>	<u>2,640.40</u>
9954	OPERATING TRANS-DEV CENTER	21,587.00	-	21,587.00
	TOTAL TRANSFERS/FEES	<u>21,587.00</u>	<u>-</u>	<u>21,587.00</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 1,148,498.90</u>	<u>\$ 26,709.75</u>	<u>\$ 1,175,208.65</u>

**CITY OF GRAND RAPIDS, MICHIGAN
WATER SUPPLY SYSTEM FUND
ADJUSTED ACTUAL EXPENSE
YEAR ENDED JUNE 30, 2019
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: DISTRIBUTION

EXPENDITURE SUB-OBJECT		OPERATING	ADJUSTED	ADJUSTED
OBJ	DESCRIPTION	EXPENSES	COST	CURRENT
			FACTORS	ANNUAL
				EXPENSES
7020	PERMANENT EMPLOYEES	\$ 389,011.83	\$ 13,148.60	\$ 402,160.43
7025	ACT.ASSIGNMENT	5,363.84	181.30	5,545.14
7050	REGULAR HOURLY RATE	130.41	4.41	134.82
7055	TIME & ONE-HALF	10,793.27	364.81	11,158.08
7105	EMPLOYERS SOCIAL SECURITY	29,308.32	990.62	30,298.94
7110	HOSPITALIZATION INSURANCE	109,137.61	13,031.03	122,168.64
7115	RETIREE HEALTH CARE	47,123.33	(13,105.00)	34,018.33
7120	RETIREMENT FUND CONTRIBUTION	86,648.95	3,621.93	90,270.88
7135	UNEMPLOYMENT COMPENSATION	529.78	-	529.78
7165	SHIFT DIFFERENTIAL	148.58	-	148.58
	TOTAL PERSONAL SERVICES	<u>678,195.92</u>	<u>18,237.70</u>	<u>696,433.62</u>
7520	SUPPLIES	36,467.22	-	36,467.22
	TOTAL SUPPLIES	<u>36,467.22</u>	<u>-</u>	<u>36,467.22</u>
8010	CONTRACTUAL SERVICES	201,197.27	-	201,197.27
8011	CONTRACT EMPLOYEES - TEMP SERVICES	13,625.82	-	13,625.82
8500	TELEPHONE	4,245.63	-	4,245.63
9180	WATER	11,133.82	-	11,133.82
9200	ELECTRICITY	1,305,376.11	-	1,305,376.11
9210	NATURAL GAS	59,529.94	-	59,529.94
9340	MAINTENANCE SERVICE	41,944.01	-	41,944.01
9410	EQUIPMENT RENTALS OR LEASE	1,826.38	-	1,826.38
9440	FLEET MANAGEMENT EQUIPMENT	68,367.00	-	68,367.00
9480	COMPUTER SERVICES	13,101.96	1,265.04	14,367.00
	TOTAL OTHER SERVICES & CHARGES	<u>1,720,347.94</u>	<u>1,265.04</u>	<u>1,721,612.98</u>
9760	EQUIPMENT	107,158.03	-	107,158.03
	TOTAL CAPITAL	<u>107,158.03</u>	<u>-</u>	<u>107,158.03</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 2,542,169.11</u>	<u>\$ 19,502.74</u>	<u>\$ 2,561,671.85</u>

**CITY OF GRAND RAPIDS, MICHIGAN
WATER SUPPLY SYSTEM FUND
ADJUSTED ACTUAL EXPENSE
YEAR ENDED JUNE 30, 2019
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: FIELD OPERATIONS

EXPENDITURE SUB-OBJECT		OPERATING	ADJUSTED	ADJUSTED
OBJ	DESCRIPTION	EXPENSES	COST	CURRENT
			FACTORS	ANNUAL
				EXPENSES
7020	PERMANENT EMPLOYEES	\$ 1,677,612.47	\$ 56,703.30	\$ 1,734,315.77
7025	ACT.ASSIGNMENT	4,166.81	140.84	4,307.65
7040	TEMPORARY EMPLOYEES	26,764.34	904.63	27,668.97
7055	TIME & ONE-HALF	271,320.22	9,170.62	280,490.84
7105	EMPLOYERS SOCIAL SECURITY	142,581.90	4,819.27	147,401.17
7110	HOSPITALIZATION INSURANCE	448,287.52	53,525.53	501,813.05
7115	RETIREE HEALTH CARE	208,417.58	(57,960.93)	150,456.65
7120	RETIREMENT FUND CONTRIBUTION	383,251.42	16,019.91	399,271.33
7135	UNEMPLOYMENT COMPENSATION	3,329.03	-	3,329.03
7165	SHIFT DIFFERENTIAL	1,824.68	-	1,824.68
	TOTAL PERSONAL SERVICES	<u>3,167,555.97</u>	<u>83,323.17</u>	<u>3,250,879.14</u>
7520	SUPPLIES	741,641.94	-	741,641.94
7670	CLOTHING/CLEANING ALLOWANCE	9,530.63	-	9,530.63
7800	INVENTORY - COST OF GOODS SOLD	(73,519.41)	-	(73,519.41)
	TOTAL SUPPLIES	<u>677,653.16</u>	<u>-</u>	<u>677,653.16</u>
8010	CONTRACTUAL SERVICES	1,879,775.91	-	1,879,775.91
8011	CONTRACT EMPLOYEES - TEMP SERVICES	120,390.14	-	120,390.14
8240	FEES	209.00	-	209.00
8500	TELEPHONE	23,461.13	-	23,461.13
9100	PROFESSIONAL DEVELOPMENT	60.00	-	60.00
9110	OTHER TRAVEL & TRAINING	40.00	-	40.00
9130	LOCAL BUSINESS EXPENSE	14.00	-	14.00
9340	MAINTENANCE SERVICE	6,215.75	-	6,215.75
9410	EQUIPMENT RENTALS OR LEASE	77,292.80	-	77,292.80
9440	FLEET MANAGEMENT EQUIPMENT	932,275.08	-	932,275.08
9480	COMPUTER SERVICES	135,258.00	13,049.00	148,307.00
	TOTAL OTHER SERVICES & CHARGES	<u>3,174,991.81</u>	<u>13,049.00</u>	<u>3,188,040.81</u>
9760	EQUIPMENT	77,506.05	-	77,506.05
9800	FURNITURE	39.19	-	39.19
	TOTAL CAPITAL	<u>77,545.24</u>	<u>-</u>	<u>77,545.24</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 7,097,746.18</u>	<u>\$ 96,372.17</u>	<u>\$ 7,194,118.35</u>

**CITY OF GRAND RAPIDS, MICHIGAN
WATER SUPPLY SYSTEM FUND
ADJUSTED ACTUAL EXPENSE
YEAR ENDED JUNE 30, 2019
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: LAKE MI. FILTRATION

EXPENDITURE SUB-OBJECT		OPERATING	ADJUSTED	ADJUSTED
OBJ	DESCRIPTION	EXPENSES	COST	CURRENT
			FACTORS	ANNUAL
				EXPENSES
7020	PERMANENT EMPLOYEES	\$ 1,907,605.18	\$ 64,477.06	\$ 1,972,082.24
7050	REGULAR HOURLY RATE	3,055.22	103.27	3,158.49
7055	TIME & ONE-HALF	98,268.31	3,321.47	101,589.78
7105	EMPLOYERS SOCIAL SECURITY	141,312.74	4,776.37	146,089.11
7110	HOSPITALIZATION INSURANCE	488,656.04	58,345.53	547,001.57
7115	RETIREE HEALTH CARE	232,153.32	(64,561.84)	167,591.48
7120	RETIREMENT FUND CONTRIBUTION	426,885.13	17,843.80	444,728.93
7135	UNEMPLOYMENT COMPENSATION	2,582.30	-	2,582.30
7165	SHIFT DIFFERENTIAL	8,360.41	-	8,360.41
	TOTAL PERSONAL SERVICES	<u>3,308,878.65</u>	<u>84,305.66</u>	<u>3,393,184.31</u>
7520	SUPPLIES	192,959.91	-	192,959.91
7530	PROCESS CHEMICALS	876,703.87	-	876,703.87
7670	CLOTHING/CLEANING ALLOWANCE	2,240.95	-	2,240.95
7800	INVENTORY - COST OF GOODS SOLD	5,446.84	-	5,446.84
8510	POSTAGE	1,114.62	-	1,114.62
	TOTAL SUPPLIES	<u>1,078,466.19</u>	<u>-</u>	<u>1,078,466.19</u>
7910	SUBSCRIPTIONS AND PUBLICATIONS	245.50	-	245.50
8010	CONTRACTUAL SERVICES	360,326.35	-	360,326.35
8011	CONTRACT EMPLOYEES - TEMP SERVICES	91,522.09	-	91,522.09
8240	FEES	288.79	-	288.79
8500	TELEPHONE	23,571.37	-	23,571.37
9110	OTHER TRAVEL & TRAINING	51.78	-	51.78
9180	WATER	825.00	-	825.00
9190	REFUSE COLLECTION CHARGES	3,394.00	-	3,394.00
9200	ELECTRICITY	1,401,261.70	(58,174.00)	1,343,087.70
9210	NATURAL GAS	117,932.98	-	117,932.98
9310	EQUIPMENT REPAIRS	509.38	-	509.38
9340	MAINTENANCE SERVICE	363,877.34	-	363,877.34
9410	EQUIPMENT RENTALS OR LEASE	7,289.43	-	7,289.43
9440	FLEET MANAGEMENT EQUIPMENT	49,630.44	-	49,630.44
9470	VEHICLE USAGE/CAR MILEAGE	89.14	-	89.14
9480	COMPUTER SERVICES	139,757.04	13,481.96	153,239.00
	TOTAL OTHER SERVICES & CHARGES	<u>2,560,572.33</u>	<u>(44,692.04)</u>	<u>2,515,880.29</u>
9760	EQUIPMENT	269,174.74	-	269,174.74
9800	FURNITURE	1,300.55	-	1,300.55
	TOTAL CAPITAL	<u>270,475.29</u>	<u>-</u>	<u>270,475.29</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 7,218,392.46</u>	<u>\$ 39,613.62</u>	<u>\$ 7,258,006.08</u>

**CITY OF GRAND RAPIDS, MICHIGAN
WATER SUPPLY SYSTEM FUND
ADJUSTED ACTUAL EXPENSE
YEAR ENDED JUNE 30, 2019
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	\$ 95,440.53	\$ 3,225.89	\$ 98,666.42
7025	ACT.ASSIGNMENT	313.68	10.60	324.28
7055	TIME & ONE-HALF	496.05	16.77	512.82
7105	EMPLOYERS SOCIAL SECURITY	6,780.66	229.19	7,009.85
7110	HOSPITALIZATION INSURANCE	23,747.97	2,835.51	26,583.48
7115	RETIREE HEALTH CARE	11,694.38	(3,252.21)	8,442.17
7120	RETIREMENT FUND CONTRIBUTION	21,504.57	898.89	22,403.46
7135	UNEMPLOYMENT COMPENSATION	131.15	-	131.15
	TOTAL PERSONAL SERVICES	<u>160,108.99</u>	<u>3,964.64</u>	<u>164,073.63</u>
7520	SUPPLIES	1,700.34	-	1,700.34
	TOTAL SUPPLIES	<u>1,700.34</u>	<u>-</u>	<u>1,700.34</u>
8010	CONTRACTUAL SERVICES	163.74	-	163.74
8011	CONTRACT EMPLOYEES - TEMP SERVICES	3,436.88	-	3,436.88
8240	FEES	590,583.67	50,000.00	640,583.67
8450	GENERAL LIABILITY INSURANCE/CLAIMS	3,100.00	(710.00)	2,390.00
8500	TELEPHONE	30.18	-	30.18
9430	BUILDINGS RENTALS OR LEASE	9,133.92	-	9,133.92
9470	VEHICLE USAGE/CAR MILEAGE	25,664.44	-	25,664.44
9480	COMPUTER SERVICES	30,696.00	(557.00)	30,139.00
	TOTAL OTHER SERVICES & CHARGES	<u>662,808.83</u>	<u>48,733.00</u>	<u>711,541.83</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 824,618.16</u>	<u>\$ 52,697.64</u>	<u>\$ 877,315.80</u>

**CITY OF GRAND RAPIDS, MICHIGAN
WATER SUPPLY SYSTEM FUND
ADJUSTED ACTUAL EXPENSE
YEAR ENDED JUNE 30, 2019
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	\$ 6,615,278.47	\$ 223,596.42	\$ 6,838,874.89
7025	ACT.ASSIGNMENT	16,448.89	555.97	17,004.86
7040	TEMPORARY EMPLOYEES	59,203.79	2,001.08	61,204.87
7050	REGULAR HOURLY RATE	3,437.71	116.20	3,553.91
7055	TIME & ONE-HALF	490,536.44	16,580.13	507,116.57
7105	EMPLOYERS SOCIAL SECURITY	508,279.37	17,179.85	525,459.22
7110	HOSPITALIZATION INSURANCE	1,712,772.07	204,504.99	1,917,277.06
7115	RETIREE HEALTH CARE	808,021.93	(224,710.91)	583,311.02
7120	RETIREMENT FUND CONTRIBUTION	1,486,828.21	62,149.43	1,548,977.64
7135	UNEMPLOYMENT COMPENSATION	11,215.31	-	11,215.31
7165	SHIFT DIFFERENTIAL	11,564.90	-	11,564.90
7175	FOOD/CLEAN/CAR ALLOW	2,490.00	-	2,490.00
	TOTAL PERSONAL SERVICES	<u>11,726,077.09</u>	<u>301,973.16</u>	<u>12,028,050.25</u>
7520	SUPPLIES	2,026,333.92	428,170.00	2,454,503.92
7530	PROCESS CHEMICALS	876,703.87	-	876,703.87
7670	CLOTHING/CLEANING ALLOWANCE	15,875.54	-	15,875.54
7800	INVENTORY - COST OF GOODS SOLD	(68,072.57)	-	(68,072.57)
8510	POSTAGE	10,634.88	-	10,634.88
	TOTAL SUPPLIES	<u>2,861,475.64</u>	<u>428,170.00</u>	<u>3,289,645.64</u>
6931	GAIN-LOSS ON SALE OF ASSETS-FA	(17,732.65)	-	(17,732.65)
7910	PUBLICATIONS AND SUBSCRIPTIONS	523.22	-	523.22
8010	CONTRACTUAL SERVICES	3,586,036.06	-	3,586,036.06
8011	CONTRACT EMPLOYEES - TEMP SERVICES	320,923.39	-	320,923.39
8015	CONTRACT SERV-TRAINING	4,061.55	-	4,061.55
8030	ADMINISTRATIVE SERVICES	99,157.63	(99,157.63)	-
8240	FEES	620,833.66	50,000.00	670,833.66
8400	INSURANCE PREMIUMS	255,108.00	43,545.00	298,653.00
8450	GENERAL LIABILITY INSURANCE / CLAIMS	256,113.00	23,004.00	279,117.00
8500	TELEPHONE	75,094.80	-	75,094.80
9000	PRINTING & PUBLISHING	5,002.71	-	5,002.71
9010	ADVERTISING - ANY MEDIA	5,067.45	-	5,067.45
9100	PROFESSIONAL DEVELOPMENT	40,685.83	-	40,685.83
9110	OTHER TRAVEL AND TRAINING	28,745.72	-	28,745.72
9130	LOCAL BUSINESS EXPENSE	249.91	-	249.91
9150	MEMBERSHIPS	62,599.33	-	62,599.33
9180	WATER	15,236.23	-	15,236.23
9190	REFUSE COLLECTION CHARGES	3,394.00	-	3,394.00
9200	ELECTRICITY	2,761,479.74	(58,174.00)	2,703,305.74
9210	NATURAL GAS	197,086.54	-	197,086.54
9310	EQUIPMENT REPAIRS	509.38	-	509.38
9340	MAINTENANCE SERVICE	454,215.28	-	454,215.28
9400	LAND RENTAL OR LEASE	4,979.82	-	4,979.82
9410	EQUIPMENT RENTALS OR LEASE	106,575.73	-	106,575.73
9430	BUILDINGS RENTALS OR LEASE	14,982.72	-	14,982.72
9440	FLEET MANAGEMENT EQUIPMENT	1,237,293.01	-	1,237,293.01
9450	311 CALL CENTER SERVICES	575,516.00	-	575,516.00
9460	ENGINEERING SERVICES	29,936.29	-	29,936.29
9470	VEHICLE RENTAL/CAR MILEAGE	44,488.11	-	44,488.11
9480	COMPUTER SERVICES	515,476.08	46,212.92	561,689.00
9480	COMPUTER SERVICES (CIS-DEPR & ROI)	-	200,448.00	200,448.00
9650	BAD DEBT WRITE-OFFS	(196.69)	-	(196.69)
	TOTAL OTHER SERVICES & CHARGES	<u>11,303,441.85</u>	<u>205,878.29</u>	<u>11,509,320.14</u>
9760	EQUIPMENT	517,329.66	-	517,329.66
9800	FURNITURE	4,463.74	-	4,463.74
9840	SOFTWARE	1,102.17	-	1,102.17
9880	CONSTRUCTION IN PROGRESS	1,551,653.89	-	1,551,653.89
	TOTAL CAPITAL	<u>2,074,549.46</u>	<u>-</u>	<u>2,074,549.46</u>
9510	A-87 COST ALLOCATION	1,000,743.00	(142,056.00)	858,687.00
9954	OPERATING TRANS-DEV CENTER	21,587.00	-	21,587.00
	TOTAL TRANSFERS/FEES	<u>1,022,330.00</u>	<u>(142,056.00)</u>	<u>880,274.00</u>
	GRAND TOTAL- EXPENDITURES	\$ 28,987,874.04	\$ 793,965.45	\$ 29,781,839.49
	LESS: SDSF CONTRIBUTION	(2,664,759.00)	(820,089.69)	(3,484,848.69)
	NET TOTAL- EXPENDITURES	<u>\$ 26,323,115.04</u>	<u>\$ (26,124.24)</u>	<u>\$ 26,296,990.80</u>

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: September 10, 2019

TO: Molly J. Clarin
Fiscal Services Manager

FROM: Jenessa B. Carter
Financial Analyst

**SUBJECT: 2019 WATER RATE STUDY TASK #4
FY19 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	\$ 30,194	2.32%	\$ 58,802	\$ 59,253
BOOSTER A	7,287	0.56%	14,191	14,300
BOOSTER D	53,151	4.07%	103,510	104,304
BRISTOL	9,186	0.70%	17,889	18,027
COLDBROOK	228,114	17.47%	444,243	447,650
COVELL	42,510	3.26%	82,787	83,422
EAST PARIS	156,352	11.98%	304,489	306,825
FRANKLIN	326,847	25.04%	636,522	641,405
LEFFINGWELL	105	0.01%	204	206
LIVINGSTON	207,221	15.87%	403,555	406,651
WILSON	102,536	7.85%	199,685	201,217
BURTON	24,573	1.88%	47,855	48,222
DEAN LAKE	117,300	8.99%	228,437	230,190
TOTAL	<u>\$ 1,305,376</u>	<u>100.00%</u>	<u>\$ 2,542,169</u>	<u>\$ 2,561,672</u>

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 1, 2019

TO: Molly Clarin
Fiscal Services Manager

FROM: Jeff Dood
Chief Financial Officer

**SUBJECT: 2019 WATER RATE STUDY TASK #5
KNOWN COST ADJUSTMENTS**

Known cost adjustments by which to adjust FY19 operating costs are listed below.

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

Labor negotiations recently concluded and GREIU and APA wages were increased by 3.00% and 2.75% in FY2020 and FY2021, respectively. After converting these increases from a 2019 fiscal year to a 2020 calendar year basis as well as factoring in lump sum payments (FY2019 only), the result is a 3.38% 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 (83% GREIU and 17% APA). Executive and non-reps amounted to only 2.1% of the population and were therefore excluded. **The wage increase factor to translate FY2019 actual costs to estimated calendar 2020 will be 3.38% [3.38 X 83% + 3.38 X 17%].**

Expense Object – 9480/8450/9510

Adjust FY2019 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 (cost allocation). The “Exhibit” workbook (inclusive of cost center allocations) maintained by the Budget Office has been utilized to blend FY2020 and FY2021 budget amounts thus arriving at an estimated 2020 calendar year rate as follows:

9480-Data Charges			
Cost Center	FY2020 Request	FY2021 Forecast	Calendar 2020 Estimate
253-4010-5910	\$29,784	\$30,494	\$30,139
536-1000-5910	\$28,394	\$29,071	\$28,733
536-2110-5910	\$132,647	\$135,809	\$134,228
536-3010-5910	\$52,056	\$53,297	\$52,676
536-4510-5910	\$14,197	\$14,536	\$14,367
536-6010-5910	\$146,560	\$150,054	\$148,307
536-6510-5910	\$151,434	\$155,045	\$153,239
Total	\$555,072	\$568,306	\$561,689

8450-General Liability Insurance			
Cost Center	FY2020 Request	FY2021 Forecast	Calendar 2020 Estimate
253-4010-5910	\$2,354	\$2,425	\$2,390
536-1000-5910	\$272,638	\$280,817	\$276,727
Total	\$274,992	\$283,242	\$279,117

9510-Contributions to Other Funds (Cost Allocation)			
Cost Center	FY2020 Request	FY2021 Forecast	Calendar 2020 Estimate
536-1000-5910	\$827,391	\$809,533	\$818,462
536-2110-5910	\$39,826	\$40,623	\$40,225
Total	\$867,217	\$850,156	\$858,687

Expense Object - 7105

Increase FY2019 actual FICA expense by 3.38% consistent with the known wage impacts detailed above.

Expense Object - 7110

The calendar 2020 Trend Report is not completed at this time. However, unfavorable health insurance cost trends were anticipated in the calendar 2019 Trend Report. Additionally, the three-year smoothing is less favorable for calendar 2020 rates than it was for calendar 2019 rates (and slightly more favorable for calendar 2021 rates) but has nonetheless helped to limit the projected increase in health insurance to 11.94%. **Increase FY2019 health insurance actual by 11.94% to reflect these anticipated rate changes.**

The projected FY20 (\$15,396) and FY21 (\$16,847) health insurance rates were blended into a 2020 calendar year rate and divided by the FY2019 base amount (\$14,402) to arrive at the increase factor [(((((\$15,396 + \$16,847) / 2)) / \$14,402) - 1) * 100].

Expense Object - 7115

Retiree health care (“RHC”) rates are projected to trend considerably down in FY2020 (to 8.55%) and FY2021 (to 8.69%) from a base year rate of 12.47% in FY2019. This decrease is slightly offset by the projected wage adjustments discussed above (lump sum payments, if any, are not subject to RHC). The Water Fund did not have an OPEB adjustment in FY2019 due to changes resulting from the prior implementation of GASB Statement No. 75.

The RHC factor after consideration of the above rate and wage adjustments is 72.19% (or a decrease of 27.81%) for both GREIU and APA members. These factors are then weighted in accordance with union membership within the Water Fund $[(-27.81 * 83\%) + (-27.81 * 17\%)]$.

The factor to establish calendar year 2020's retiree health care cost is -27.81%.
Decrease the total of fiscal year 2019's retiree health care by this percent to establish the cost for calendar year 2020.

Expense Object - 7120

The pension expense factor to translate FY2019 actual costs to estimated calendar 2020 will be 4.18%. **Increase the total of fiscal year 2019's pension expense by this percent to establish the cost for calendar year 2020.** This reflects the effect of a General Pension rate change decrease from FY19 of 22.93% to a calendar 2020 rate of 22.88% and the projected wage adjustments discussed above (lump sum payments, if any, are not pensionable). The calendar 2020 rate is a blend of the FY2020 rate (22.63%) and the FY2021 rate (23.12%).

The pension factor after consideration of the above rate and wage adjustments is 104.18% (or an increase of 4.18%) for GREIU and APA members. These factors are then weighted in accordance with union membership within the Water Fund $[(4.18 * 83\%) + (4.18 * 17\%)]$.

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 16, 2019

TO: Molly J. Clarin
Fiscal Services Manager

FROM: David Harran
Water System Manager

**SUBJECT: 2019 WATER RATE STUDY TASK #5
KNOWN COST ADJUSTMENTS**

Known cost adjustments by which to adjust FY19 operating costs are listed below:

<u>ACCOUNT</u>	<u>DESCRIPTION</u>	<u>AMOUNT</u>
5910-536-1000-8030	Kent County Community Action Program (ICB)	(\$99,157.63)
5910-536-1000-8400	Insurance Premiums	\$43,545.00
5910-536-2110-7520	Advanced Metering Infrastructure (AMI)	\$428,170.00
5910-536-2110-9480*	Cayenta Customer Information System (ROI & Dep)	\$200,448.00
5910-536-6510-9200	Consumers Energy Green Generation participation	(\$58,174.00)
5910-253-4010-8240	PayIt online bill pay program	\$50,000.00

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

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: September 5, 2019

TO: Molly J. Clarin
Fiscal Services Manager

FROM: Jenessa B. Carter
Financial Analyst

SUBJECT: 2019 WATER RATE STUDY TASK #6

The Water Supply System Fund's revenue and volumes by governmental unit for the year ending June 30, 2019, 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, 2019:

RETAIL:	SALES REVENUE		3 YR AVE VOL BILLED	3 YR AVE VOL BILLED
	A	B	(GALLONS)	(HCF)
CITY OF GRAND RAPIDS (1)	\$ 25,778,877.93		6,352,865,728	8,493,136
CITY OF WALKER	3,294,766.04		921,136,568	1,231,466
CITY OF KENTWOOD	4,197,369.76		1,344,800,776	1,797,862
CASCADE TOWNSHIP	3,524,276.27		714,654,160	955,420
GRAND RAPIDS TOWNSHIP	2,352,676.01		527,300,356	704,947
TALLMADGE TOWNSHIP	211,744.27	44,378.40	36,560,744	48,878
SUB-TOTAL RETAIL (2)	<u>\$ 39,359,710.28</u>	<u>\$ 44,378.40</u>	<u>9,897,318,332</u>	<u>13,231,709</u>
WHOLESALE:				
CITY OF E. GRAND RAPIDS	\$ 788,393.40		417,485,728	558,136
OTTAWA CO. (3)	2,013,068.21	11,527.20	1,280,872,956	1,712,397
ADA TOWNSHIP	1,220,922.87		461,322,268	616,741
SUB-TOTAL WHOLESALE	<u>\$ 4,022,384.48</u>	<u>\$ 11,527.20</u>	<u>2,159,680,952</u>	<u>2,887,274</u>
TOTAL	<u>\$ 43,382,094.76</u>	<u>\$ 55,905.60</u>	<u>12,056,999,284</u>	<u>16,118,983</u>

REVENUE CLASSIFICATION:

A) 536-1000-5910-6431 RETAIL METERED WATER SALES	39,355,445.71
536-1000-5910-6433 WHOLESALE WATER SALES	4,022,384.48
536-1000-5910-6435 WYOMING WATER SALES	4,264.57
SUB-TOTAL	<u>\$ 43,382,094.76</u>
B) 536-1000-5910-6171 FIRE HYDRANT BILLINGS	55,905.60
TOTAL	<u>\$ 43,438,000.36</u>

(1) THE VOLUME & REVENUE AMOUNT FOR THE CITY OF WYOMING ARE INCLUDED IN THE GRAND RAPIDS TOTALS.

(2) A NET REVENUE ACCRUAL OF (\$142,196.42) HAS BEEN PRORATED TO ALL RETAIL CUSTOMER COMMUNITIES TO ACCRUE BILLINGS FROM THE LAST READING DATE THROUGH JUNE 30, 2019.

(3) OTTAWA COUNTY RATES ARE CALCULATED BASED ON MOST RECENT FISCAL YEAR BILLED VOLUME PER CONTRACT.

**CITY OF GRAND RAPIDS, MICHIGAN
WATER SUPPLY SYSTEM FUND
2019 RATE STUDY TASK NO. 6**

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

MUNICIPALITY	FY15		FY16		FY17		FY18		FY19		FY15 - FY19 % CHANGE
	VOL BILLED	% CHANGE	VOL BILLED	% CHANGE	VOL BILLED	% CHANGE	VOL BILLED	% CHANGE	VOL BILLED	% CHANGE	
GRAND RAPIDS	5,992,342	1.84%	6,102,682	1.84%	6,294,410	3.14%	6,346,480	0.83%	6,417,706	1.12%	7.10%
WALKER	850,477	0.40%	853,911	0.40%	893,794	4.67%	939,897	5.16%	929,719	-1.08%	9.32%
KENTWOOD	1,236,055	3.07%	1,274,046	3.07%	1,314,005	3.14%	1,377,822	4.86%	1,342,574	-2.56%	8.62%
CASCADE TWP	597,335	6.05%	633,446	6.05%	708,744	11.89%	739,323	4.31%	695,896	-5.87%	16.50%
GRAND RAPIDS TWP	475,723	-0.45%	473,584	-0.45%	495,024	4.53%	541,008	9.29%	545,871	0.90%	14.75%
TALLMADGE TWP	21,283	15.75%	24,635	15.75%	30,912	25.48%	37,179	20.27%	41,592	11.87%	95.42%
EAST GRAND RAPIDS**	456,742	-8.81%	416,499	-8.81%	419,574	0.74%	419,637	0.02%	413,246	-1.52%	-9.52%
OTTAWA COUNTY	900,454	14.80%	1,033,701	14.80%	1,167,086	12.90%	1,209,789	3.66%	1,280,873	5.88%	42.25%
ADA TWP	444,487	6.20%	472,046	6.20%	482,549	2.22%	463,080	-4.03%	438,337	-5.34%	-1.38%
TOTAL	10,974,896	2.82%	11,284,549	2.82%	11,806,098	4.62%	12,074,215	2.27%	12,105,814	0.26%	10.30%
VOLUME PUMPED	12,362,000		12,684,000		12,649,000		13,525,000		12,911,000		
% BILLED TO PUMPED	88.8%		89.0%		93.3%		89.3%		93.8%		
GRAND RAPIDS VOLUME COMPARED TO CUSTOMER COMMUNITIES											
VOLUME = 1,000 GALLONS	FY15	FY16	FY17	FY18	FY19	FY15	FY16	FY17	FY18	FY19	% OF TOTAL
GRAND RAPIDS	5,992,342	6,102,682	6,294,410	6,346,480	6,417,706	53.31%	54.08%	53.31%	52.56%	53.01%	
CUSTOMER COMMUNITIES	4,982,554	5,181,867	5,511,688	5,727,735	5,688,108	46.69%	46.69%	47.44%	47.44%	46.99%	
TOTAL	10,974,896	11,284,549	11,806,098	12,074,215	12,105,814	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

* 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	\$ 5,820.00
	4916	TAPPING PERMITS	49,500.00
	6260	SERVICE FEES-GENERAL	387,430.00
	6265	SERVICES FOR CONTRACTORS	87,092.08
	6140	INSPECTION FEES - UTILITIES	113,080.00
	6151	METER SETTING FEES	29,160.00
	6423	SALE OF SCRAP MATERIAL	19,812.50
	6461	INVENTORY WITHDRAWALS	7,797.93
	6434	UNMETERED WATER	177,689.79
	6723	PENALTIES ON SPECIAL ASSESSMENTS	5,529.82
			<u>\$ 882,912.12</u>

CREDIT: UNDERUTILIZATION OF PENALTY CREDIT FROM PREVIOUS YEAR	<u>\$ 40,891.00</u>
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INTEGRATED SYSTEM CREDITS

536-1000-5910			
	6152	INTEGRATED WATER CONNECTION	359,368.00
			<u>\$ 359,368.00</u>

OFFSETTING CREDIT TO CUSTOMER ACCOUNTING ACTIVITY EXPENSES:

536-1000-5910			
	6991	BILLABLE EXPENSE - SEWAGE DISPOSAL SYSTEM*	<u>\$ 2,664,759.00</u>

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

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 3, 2019

TO: Molly J. Clarin
Fiscal Services Manager

FROM: Dave Harran
Water System Manager

SUBJECT: 2019 WATER RATE STUDY – TASK #8

No significant changes in operating levels are anticipated to take effect by January 1, 2020, which would require adjustments to operating costs for the test period.

DH

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 3, 2019

TO: Molly J. Clarin
Fiscal Services Manager

FROM: Dave Harran
Water System Manager

SUBJECT: 2019 WATER RATE STUDY – TASK #9

No significant changes in water revenues are anticipated to take effect by January 1, 2020, which would require an adjustment to operating revenue estimates as a whole.

DH

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: November 21, 2019

TO: Molly J. Clarin
Fiscal Services Manager

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

SUBJECT: 2019 WATER RATE STUDY- TASK #10

The following are water system projects that should be considered operative as of January 1, 2020.

<u>Description</u>	<u>Location</u>	<u>Proj. Code</u>	<u>Cost</u>
LMFP North Clearwell Improvements	Integrated	591518051 591418051	\$1,181,000
LMFP South High Lift Pump Supports	Integrated	591115159 591515159	570,807
LMFP Stormwater Improvements	Integrated	591117051 591119109	332,000
Valley, Park, Dayton, Hovey, Watson	Grand Rapids	591520063	1,000,000
Worden St – Madison to Eastern	Grand Rapids	591119115 591218050G	900,000
Lake Michigan Drive & Lane	Grand Rapids	591119041	750,000
Hastings Ave – Fairview to Prospect	Grand Rapids	591119044 591117152	650,000
Seward & Richmond	Grand Rapids	591518055	600,000
Allerton – Adams to Hall	Grand Rapids	591120040	525,000
Tulip Tank	Grand Rapids	591119057 591119059	337,500
Somerset Drive & Somerset Hill Ct	Grand Rapids	591417049	112,785
50 Crahen Development	GR Township	Contribution	75,000
National Tire Wholesale	Cascade	Contribution	135,125
Lanterns Condominiums	Cascade	Contribution	96,563
Roskam Bakery Expansion	Kentwood	Contribution	240,884
Cobblestone at Ravines Ph 2	Kentwood	Contribution	156,070
Woodland Mall Expansion	Kentwood	Contribution	124,561
Blarview Parkway at Ravines	Kentwood	Contribution	106,580
Pfeiffer Pines Site Condominium	Kentwood	Contribution	105,576
Meadow Verde Ph 3	Tallmadge	Contribution	234,926
Maynard Ave	Walker	591518052	1,750,000
Cambridge Grove Ph 2	Walker	Contribution	291,628

Bezt Industries	Walker	Contribution	285,845
Westtown Ph 1	Walker	Contribution	319,510
Valley Site Farms	Walker	Contribution	208,650
Westtown Ph 2	Walker	Contribution	110,400
Cambridge Grove Ph 2 – Oversizing	Walker	591117096	57,446
		Total	<u>\$11,257,856</u>

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

COMPUTE ACCUMULATED COST, DEPRECIATION AND DEPRECIATION EXPENSE AS OF JUNE 30, 2019

INTEGRATED SYSTEM

	ORIGINAL COST	ACCUMULATED DEPRECIATION	DEPRECIATION EXPENSE
LAND & EASEMENTS	\$ 2,507,974	\$ -	\$ -
LAND IMPROVEMENTS	2,506,137	1,677,657	74,284
BUILDINGS & STRUCTURES	47,785,956	26,646,280	912,826
STORAGE	9,730,537	6,564,893	236,083
PROCESS EQUIPMENT	61,313,257	42,326,252	1,807,265
AUXILIARY EQUIPMENT	22,202,283	15,090,395	655,222
METERS	7,375,481	7,375,481	-
MACHINERY & EQUIPMENT	3,224,290	3,009,016	27,539
OFFICE EQUIPMENT & FURNITURE	622,184	622,184	-
WATERMAINS	55,592,968	21,560,937	710,116
	<u>\$ 212,861,067</u>	<u>\$ 124,873,095</u>	<u>\$ 4,423,335</u>

NON-INTEGRATED SYSTEM

	ORIGINAL COST	ACCUMULATED DEPRECIATION	DEPRECIATION EXPENSE
LAND & EASEMENTS	\$ 2,729,439	\$ -	\$ -
LAND IMPROVEMENTS	1,204,988	1,066,488	40,656
BUILDINGS & STRUCTURES	13,693,626	4,824,543	306,721
STORAGE	12,706,875	6,652,389	288,447
PROCESS EQUIPMENT	7,074,268	3,691,387	196,282
AUXILIARY EQUIPMENT	6,119,625	4,915,025	317,357
MACHINERY & EQUIPMENT	2,013,295	1,995,716	(123,258)
OFFICE EQUIPMENT & FURNITURE	533,805	530,076	9,138
WATERMAINS - GRAND RAPIDS	176,070,576	40,180,935	2,283,798
WATERMAINS - WALKER	27,065,558	8,309,957	360,324
WATERMAINS - KENTWOOD	30,840,815	9,296,683	411,135
WATERMAINS - CASCADE TWP	23,888,693	6,908,658	319,533
WATERMAINS - GRAND RAPIDS TWP	20,275,824	5,257,987	267,211
WATERMAINS - TALLMADGE TWP	2,820,369	486,169	33,456
	<u>\$ 327,037,756</u>	<u>\$ 94,116,013</u>	<u>\$ 4,710,800</u>
TOTAL	<u>\$ 539,898,823</u>	<u>\$ 218,989,108</u>	<u>\$ 9,134,135</u>

SOURCE: GENERAL LEDGER, AS ADJUSTED, FOR JUNE 30, 2019.

**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, 2019: \$ 1,777,518

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 = \$ 26,296,991 @ 90/365 = \$ 6,484,190

TOTAL WORKING CAPITAL NEEDS CONSIST OF THE FOLLOWING:

12A INVESTMENT IN INVENTORY	\$ 1,777,518
12B PREPAYMENT OF OPERATING EXPENSES	-
12C 90 DAY OPERATING EXPENSES	<u>6,484,190</u>
	<u><u>\$ 8,261,708</u></u>

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: August 5, 2019

TO: Molly J. Clarin
Fiscal Services Manager

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

**SUBJECT: 2019 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: August 5, 2019

TO: Molly Clarin
Fiscal Service Manager

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

SUBJECT: 2019 WATER RATE STUDY- TASK #14

There have been no changes in 2019 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	\$ 11,257,856	
	- TASK #11	539,898,823	
		<hr/>	\$ 551,156,679
LESS: ACCUMULATED DEPRECIATION	- TASK #11	\$ 218,989,108	
		<hr/>	(218,989,108)
			<hr/>
			332,167,571
WORKING CAPITAL REQUIREMENT	- TASK #12	\$ 8,261,708	
		<hr/>	8,261,708
			<hr/>
			340,429,279
CONTRIBUTIONS BY OTHERS	- TASK #21	\$ 101,454,954	
LESS: AMORTIZATION		(35,933,400)	
		<hr/>	(65,521,554)
CONSTRUCTION COST RATE BASE			<hr/> <hr/>
			\$ 274,907,725

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 16, 2019

TO: Molly J. Clarin
Fiscal Services Manager

FROM: Arden Postma, P.E.
Hydraulic Engineer

SUBJECT: 2019 Water Rate Study Integrated Connection Fees Task #15A

Attached is the Integrated Water and Sewer Connection Fee Schedule of rates effective January 1, 2020. 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, 2020, shall be as follows:

Residential Users (three residential units or less)

Plan Review and Connection Fee (PRC Fee)			
Meter Size	2019	2020	% Change
3/4 inch	\$350	\$360	2.85%
1 inch	\$360	\$370	2.78%
1-1/2 inch	\$360	\$370	2.78%

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

Plan Review and Connection Fee (PRC Fee)			
Meter Size	2019	2020	% Change
3/4 inch	\$680	\$700	2.94%
1 inch	\$870	\$910	4.60%
1-1/2 inch	\$1,140	\$1,220	7.02%
2 inch	\$1,610	\$1,680	4.35%
3 inch	\$1,960	\$2,100	7.14%
4 inch	\$2,730	\$3,025	10.81%
6 inch	\$3,970	\$4,270	7.56%

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:

Meter Capacity Charge			
Meter Size	2019	2020	% Change
¾ inch	\$210	\$210	0%
1 inch	\$250	\$250	0%
1 ½ inch - T2	\$800	\$750	-6.25%
2 inch - T2	\$900	\$880	-2.22%
3 inch - T2	\$1,100	\$1,100	0%
4 inch - T2	At cost	At cost	0%
6 inch - T2	At cost	At cost	0%
1 ½ inch - C2	NA	\$1,200	NA
2 inch - C2	NA	\$1,385	NA
3 inch - C2	NA	\$1,755	NA
4 inch -C2	NA	At cost	NA
6 inch - C2	NA	At cost	NA

Irrigation/Fire Protection Review Fee

Irrigation/Fire Service Review Fee			
	2019	2020	% Change
All Sizes	\$695	\$710	2.16%

Commercial Plan Assessment Fee – For instances where there is an established connection or property has been previously reviewed to allow for connection to the System which require less System resources to verify system connection requirements.

Commercial Plan Assessment Fee			
	2019	2020	% Change
All Sizes	NA	\$125	NA

Further information on the new integrated connection fee methodology can be provided through the Utility Business Office.

AP/WJ

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**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	METER SYSTEM UPGRADES	2,500,000	2019
2	ALGER WM REPLACEMENT	1,300,000	2019
3	DIVISION AVE WM REPLACEMENT	1,448,000	2019
4	LEAD SERVICE LINE REPLACEMENTS	1,000,000	2020
5	GODFREY WM REPLACEMENTS	3,560,000	2020
6	EMERALD WM REPLACEMENT	1,200,000	2020
7	TREMONT WM REPLACEMENT	750,000	2020
8	GRIGSS WM REPLACEMENT	1,370,000	2020
9	BOOSTER D IMPROVEMENTS	700,000	2020
10	WILSON PS IMPROVEMENTS	1,500,000	2020
11	COLDBROOK PUMP STATION DECOMMISSION PROJECTS	13,190,000	2020
12	VALLEY WM REPLACEMENTS	1,200,000	2020
13	BURTON/I-96 WM CROSSING	550,000	2020
14	OAK PARK WM REPLACEMENT	865,000	2021
15	LANGLEY WM REPLACEMENT	900,000	2021
16	SUNNYBROOK WM REPLACEMENT	500,000	2021
17	CASCADE NORTH RIVER CROSSING	4,200,000	2021
18	TREMONT WM REPLACEMENT	750,000	2021
19	FULTON WM REPLACEMENT	1,210,000	2021
20	LAKE EASTBROOK WM REPLACEMENT	1,100,000	2021
21	LEAD SERVICE LINE REPLACEMENTS	1,000,000	2021
22	ROSEWOOD WM REPLACEMENT	1,200,000	2021
23	SOUTH WALKER WATERMAIN PHASE 3	2,000,000	2021
24	WILSON RESERVOIR IMPROVEMENTS	500,000	2021
25	KNAPP TANK IMPROVEMENTS	500,000	2021
26	FRANKLIN WM REPLACEMENT	1,200,000	2021
27	COLLEGE WM REPLACEMENT	1,945,000	2022

28	LEAD SERVICE LINE REPLACEMENTS	1,000,000	2022
29	BUTTERWORTH LP DISTRICT IMPROVEMENTS	1,374,000	2022
30	GARFIELD WM REPLACEMENTS	1,290,000	2022
31	HOUSEMAN WM REPLACEMENT	700,000	2022
32	NOBLE WM REPLACEMENTS	850,000	2022
33	BERKSHIRE WM REPL.	1,500,000	2023
34	LEAD SERVICE LINE REPLACEMENTS	1,000,000	2023
35	OKEMOS WM REPLACEMENT	875,000	2023
36	LEONARD TANK IMPROVEMENTS	500,000	2023
37	EMERALD WM REPLACEMENTS	1,300,000	2023
38	KENT RIDGE WM REPLACEMENT	1,000,000	2023
39	STEVENS WM REPLACEMENT	1,000,000	2023
40	BOOSTER A PUMP STATION IMPROVEMENTS	500,000	2023
41	GIDDINGS WM REPLACEMENT	1,300,000	2023
42	OTTAWA WM REPLACEMENT	1,300,000	2023
43	GIDDINGS WM REPLACEMENT	1,300,000	2023
44	OTTAWA WM REPLACEMENT	1,300,000	2023
45	INTERMEDIATE PD TANK	4,000,000	2023
46	OMENA WM REPLACEMENT	700,000	2023
47	FULLER WM REPLACEMENT	500,000	2023
48	PLYMOUTH WM REPLACEMENT	570,000	2023
49	LEAD SERVICE LINE REPLACEMENTS	1,000,000	2024
50	KNAPP WATERMAIN REPLACEMENTS	2,250,000	2024
51	HALL WM REPLACEMENT	800,000	2024
52	COVELL RESERVOIR JOINT REPLACEMENTS	1,000,000	2024
53	LINCOLN WM REPLACEMENTS	600,000	2024
54	GRANDVILLE WM REPLACEMENTS	650,000	2024
55	ALGER TANK IMPROVEMENTS	500,000	2024
56	LONDON WM IMPROVEMENTS	650,000	2024
57	BUTTERWORTH WM IMPROVEMENTS	840,000	2024
		<u>\$ 80,287,000</u>	

NOTE: NONE OF THE PROJECTS ABOVE ARE INCLUDED IN RECOMMENDED REVENUE REQUIREMENTS FOR CALENDAR YEAR 2020. COSTS SHOWN ARE IN 2019 DOLLARS AND ARE TAKEN FROM THE FISCAL YEARS 2020-2024 CAPITAL PROJECT PLAN.

SOURCE: WAYNE JERNBERG, ASSISTANT WATER SYSTEM MANAGER, SEPTEMBER 2019

**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
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>\$ 98,045,000</u>	<u>\$ 66,273,669</u>	<u>\$ 164,318,669</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	\$ 274,907,725
LESS: BONDED INDEBTEDNESS in CCRB (CASH BASIS) - TASK NO. 20	(93,291,372)
NET WATER SYSTEM EQUITY	<u>\$ 181,616,353</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>
27-Sep-18	4.175%	28-Mar-19	3.793%
04-Oct-18	4.235%	04-Apr-19	3.883%
11-Oct-18	4.365%	11-Apr-19	3.853%
18-Oct-18	4.345%	18-Apr-19	3.860%
25-Oct-18	4.300%	25-Apr-19	3.790%
01-Nov-18	4.333%	02-May-19	3.734%
08-Nov-18	4.363%	09-May-19	3.630%
15-Nov-18	4.303%	16-May-19	3.570%
22-Nov-18	4.260%	23-May-19	3.560%
29-Nov-18	4.220%	30-May-19	3.510%
06-Dec-18	4.125%	06-Jun-19	3.482%
13-Dec-18	4.180%	13-Jun-19	3.520%
20-Dec-18	4.110%	20-Jun-19	3.510%
27-Dec-18	4.100%	27-Jun-19	3.500%
03-Jan-19	4.085%	04-Jul-19	3.490%
10-Jan-19	4.195%	11-Jul-19	3.460%
17-Jan-19	4.190%	18-Jul-19	3.452%
24-Jan-19	4.230%	25-Jul-19	3.432%
31-Jan-19	4.220%	01-Aug-19	3.422%
07-Feb-19	4.225%	08-Aug-19	3.222%
14-Feb-19	4.235%	15-Aug-19	3.102%
21-Feb-19	4.230%	22-Aug-19	3.072%
28-Feb-19	4.185%	29-Aug-19	2.972%
07-Mar-19	4.090%	05-Sep-19	2.972%
14-Mar-19	4.040%	12-Sep-19	2.852%
21-Mar-19	3.920%	19-Sep-19	2.762%
		<u>52 WEEKS</u>	<u>3.820%</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)	\$ 181,616,353	@ 4.820%	= \$ 8,754,746
WATER SYSTEM INDEBTEDNESS IN THE CCRB			
2011 DWRF BONDS	1,161,301	@ 2.50%	= 29,033
2011 DWRF BONDS	2,066,024	@ 2.50%	= 51,651
2012 DWRF BONDS	2,590,930	@ 2.50%	= 64,773
2012 DWRF BONDS	503,514	@ 2.00%	= 10,070
2013 BONDS	1,875,000	@ 2.76%	= 51,750
2014 DWRF BONDS	2,397,840	@ 2.50%	= 59,946
2014 QECB BONDS	1,038,156	@ 2.54%	= 26,369
2015 BONDS (refunded 2009 Bonds)	24,385,000	@ 5.00%	= 1,219,250
2015 DWRF BONDS	8,538,063	@ 2.50%	= 213,452
2016 DWRF BONDS (amount in CCRB)	1,903,008	@ 2.50%	= 47,575
2016 BONDS (refunded 2009)	36,475,000	@ 4.99%	= 1,818,536
2018 BONDS (refunded 1993 & amt in CCRB)	10,357,536	@ 4.94%	= 511,413
LESS INTEREST ON BOND RESERVE ACCOUNTS			(147,551)
	\$ 274,907,725		\$ 12,711,013
COMPOSITE RATE OF RETURN ON INVESTMENT		\$ 12,711,013 \$274,907,725	= 4.624%
<u>Noted Disclosure:</u>			
TOTAL BONDED INDEBTEDNESS IN CCRB (from above)	\$ 93,291,372	TASK NO. 18	

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, 2019

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	\$ 214,944,874	\$ 30,676,059	\$ 38,152,403	\$ 24,116,878	\$ 18,860,491	\$ 3,055,295	\$ -	\$ -	\$ -	\$ 528,535,460	
LESS: ACCUMULATED DEPRECIATION	124,873,095	8,630,228	11,087,656	6,907,443	4,795,092	486,169	-	-	-	213,072,577	
NET BOOK VALUE	\$ 90,071,779	\$ 22,045,831	\$ 27,064,747	\$ 17,209,435	\$ 14,065,399	\$ 2,569,126	\$ -	\$ -	\$ -	\$ 315,462,883	
WORKING CAPITAL REQUIREMENT	3,173,075	456,294	509,086	411,185	339,556	25,859	25,033	59,567	59,567	8,261,708	
CONTRIBUTIONS	\$ 93,244,853	\$ 22,502,125	\$ 27,573,833	\$ 17,620,620	\$ 14,404,955	\$ 2,594,985	\$ 25,033	\$ -	\$ 59,567	\$ 323,724,591	
LESS AMORTIZATION	580,137	20,802,842	17,738,346	20,642,604	14,404,983	2,770,369	-	-	-	101,397,980	
	(53,050)	(6,553,471)	(5,861,691)	(5,913,725)	(3,985,351)	(495,600)	-	-	-	(35,876,426)	
CONSTRUCTION COST RATE BASE	\$ (527,087)	\$ (14,249,371)	\$ (11,876,655)	\$ (14,728,879)	\$ (10,419,632)	\$ (2,274,769)	\$ -	\$ -	\$ -	\$ (65,521,554)	
	\$ 92,717,766	\$ 8,252,754	\$ 15,697,178	\$ 2,891,741	\$ 3,985,323	\$ 320,216	\$ 25,033	\$ -	\$ 59,567	\$ 258,203,037	
RETURN ON INVESTMENT- TASK 4/5	3,945									3,945	
RETURN ON INVESTMENT- TASK 20	\$ 4,287,270	\$ 381,607	\$ 725,838	\$ 133,714	\$ 184,281	\$ 14,807	\$ 1,158	\$ -	\$ 2,754	\$ 11,935,364	
	4.624%										

ZONEGATED

COST	\$ -	\$ (5,993,405)	\$ 593,760	\$ 2,201,663	\$ 12,936,908	\$ 246,195	\$ 1,659,682	\$ -	\$ 4,842,618	\$ 22,621,219
LESS: ACCUMULATED DEPRECIATION	-	(4,055,896)	461,320	1,225,161	3,996,096	130,159	578,872	-	1,611,205	5,916,531
NET BOOK VALUE	-	\$ (1,937,509)	\$ 132,440	\$ 976,502	\$ 8,940,812	\$ 116,036	\$ 1,080,810	\$ -	\$ 3,231,413	\$ 16,704,688
WORKING CAPITAL REQUIREMENT	-	-	-	-	-	-	-	-	-	-
CONTRIBUTIONS	\$ -	\$ (1,937,509)	\$ 132,440	\$ 976,502	\$ 8,940,812	\$ 116,036	\$ 1,080,810	\$ -	\$ 3,231,413	\$ 16,704,688
LESS AMORTIZATION	-	-	-	6,993	3,351	-	9	-	20,981	56,974
	-	-	-	(6,993)	(3,351)	-	(9)	-	(20,981)	(56,974)
CONSTRUCTION COST RATE BASE	\$ -	\$ (1,937,509)	\$ 132,440	\$ 976,502	\$ 8,940,812	\$ 116,036	\$ 1,080,810	\$ -	\$ 3,231,413	\$ 16,704,688
RETURN ON INVESTMENT- TASK 19/20	\$ -	\$ (161,210)	\$ 11,020	\$ 81,249	\$ 743,917	\$ 9,655	\$ 89,928	\$ -	\$ 268,868	\$ 1,389,906
RETURN ON INVESTMENT- TASK 19/20	8.320%	8.320%	8.320%	8.320%	8.320%	8.320%	8.320%	-	8.320%	8.320%
TOTAL RETURN ON INVESTMENT	\$ 4,287,270	\$ 6,042,725	\$ 392,627	\$ 807,087	\$ 877,631	\$ 24,462	\$ 91,086	\$ -	\$ 271,622	\$ 13,325,270

CITY OF GRAND RAPIDS, MICHIGAN
 WATER SUPPLY SYSTEM FUND
 CONTRIBUTIONS & AMORTIZED CONTRIBUTIONS- TASK NO. 21- PART 3
 FISCAL YEAR ENDED JUNE 30, 2019

CONTRIBUTIONS BY OTHERS

COST CENTER	AMOUNT	RETAIL						WHOLESALE				TOTAL
		INTEGRATED SYSTEM	CITY OF GR	CITY OF WALKER	CITY OF KENTWOOD	CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADGE TOWNSHIP	CITY OF EAST GR	COUNTY OF OTTAWA	ADA TOWNSHIP	
2018 RATE STUDY- LOCATION		\$ 562,048	\$ 23,912,212	\$ 20,728,375	\$ 17,595,653	\$ 20,198,926	\$ 13,572,241	\$ 2,441,790	\$ -	\$ -	\$ -	\$ 99,011,245
ADDITIONS:												
FRONT FOOT FEES			32,056	74,467	142,693	7,565	29,265	-	-	-	-	286,046
FIXED ASSET CONTRIBUTIONS	18,089		514,431	-	-	436,113	803,477	328,579	-	-	-	2,100,689
OTHER CONTRIBUTIONS												
PUMPING STATIONS:		580,137	24,458,699	20,802,842	17,738,346	20,642,604	14,404,983	2,770,369	-	-	-	101,397,980
LEFFINGWELL	\$ 115,303				6,993	3,351	25,640	-	-	20,981	-	56,974
ADJUSTED BY ZONEGATING		580,137	24,458,699	20,802,842	17,745,339	20,645,955	14,430,623	2,770,369	-	20,981	-	101,454,954
LESS: ZONEGATING ADJUSTMENT					6,993	3,351	25,640	-	-	20,981	-	56,974
PHYSICAL LOCATION		580,137	24,458,699	20,802,842	17,738,346	20,642,604	14,404,983	2,770,369	-	-	-	101,397,980
AMORTIZED CONTRIBUTIONS												
2018 RATE STUDY- LOCATION		\$ 45,315	\$ 12,224,496	\$ 6,272,233	\$ 5,622,698	\$ 5,637,207	\$ 3,791,266	\$ 458,661	\$ -	\$ -	\$ -	\$ 34,051,876
CURRENT YEAR ADJUSTMENTS	7,735		319,096	281,238	238,993	276,518	194,085	36,939	-	-	-	1,354,604
PRIOR PERIOD ADJUSTMENT			469,946									469,946
PUMPING STATIONS:		53,050	13,013,538	6,553,471	5,861,691	5,913,725	3,985,351	495,600	-	-	-	35,876,426
LEFFINGWELL	115,303				6,993	3,351	25,640	-	-	20,981	-	56,974
ADJUSTED BY ZONEGATING		53,050	13,013,538	6,553,471	5,868,684	5,917,076	4,010,991	495,600	-	20,981	-	35,933,400
LESS: ZONEGATING ADJUSTMENT					6,993	3,351	25,640	-	-	20,981	-	56,974
PHYSICAL LOCATION		53,050	13,013,538	6,553,471	5,861,691	5,913,725	3,985,351	495,600	-	-	-	35,876,426

CITY OF GRAND RAPIDS, MICHIGAN
WATER SUPPLY SYSTEM FUND
RECONCILIATION OF CONSTRUCTION COST & ACCUMULATED DEPRECIATION- PHYSICAL LOCATION & ZONEGATING
FISCAL YEAR ENDED JUNE 30, 2019

COST CENTER BY PHYSICAL LOCATION-TASK 11 IN SERVICE- TASK 10	AMOUNT	CONSTRUCTION COST-BY PHYSICAL LOCATION										TOTAL	
		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			
		\$ 222,146,497	\$ 3,023,479	\$ 27,088,815	\$ 23,888,693	\$ 20,275,824	\$ 2,820,369	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 539,898,823
		4,875,285	3,023,479	733,672	231,688	75,000	234,926	-	-	-	-	-	11,257,856
		(612,700)	612,700										
		(6,379,717)	6,379,717										
		(219,892)	219,892										
		(3,938,991)	3,938,991										
		(725,425)	(725,425)	(10,825,800)	(6,200)	(2,208,247)							(43,370,922)
		12,464,228	479,855	7,085,009	2,697	717,914							20,749,703
		\$ 198,729,461	\$ 30,676,059	\$ 38,152,403	\$ 24,116,878	\$ 18,860,491	\$ 3,055,295	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 528,535,460
CONSTRUCTION COST-ZONEGATING													
		\$ (2,025,194)	\$ -	\$ 151,552	\$ 62,321	\$ 1,083,735	\$ -	\$ 77	\$ -	\$ 727,509	\$ -	\$ -	\$ -
		(1,229,533)	-	104,315	41,794	648,696	-	185	-	434,543	-	-	-
		(4,922,809)	-	2,606,331	1,379,862	91,596	-	841,869	-	3,151	-	-	-
		(69,676)	-	8,552	4,098	31,356	-	11	-	25,659	-	-	-
		585,275	-	(4,316,262)	3,474,148	174,021	-	-	-	82,818	-	-	-
		(210,034)	-	111,202	58,872	3,908	-	35,918	-	134	-	-	-
		(145,946)	144,210	-	-	1,736	-	-	-	-	-	-	-
		(71,061)	-	5,318	2,187	38,026	-	3	-	25,527	-	-	-
		(20,556)	-	18,022	662	1,707	-	164	-	1	-	-	-
		469,946	-	(2,944,467)	1,954,414	231,929	-	-	-	288,178	-	-	-
		1,646,183	449,550	6,457,100	5,968,550	3,828,824	244,459	781,455	-	3,255,098	-	-	22,621,219
		(5,993,405)	\$ 593,760	\$ 2,201,653	\$ 12,936,908	\$ 6,133,798	\$ 246,195	\$ 1,659,682	\$ -	\$ 4,842,618	\$ -	\$ -	\$ 22,621,219
		\$ 192,736,056	\$ 31,269,819	\$ 40,354,066	\$ 37,053,786	\$ 24,994,289	\$ 3,301,490	\$ 1,659,682	\$ -	\$ 4,842,618	\$ -	\$ -	\$ 551,156,670
ACCUMULATED DEPRECIATION-BY PHYSICAL LOCATION													
		\$ 63,856,559	\$ 8,309,957	\$ 9,296,683	\$ 6,908,658	\$ 5,257,987	\$ 486,169	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 218,989,108
		(349,129)	349,129										
		(2,283,416)	2,283,416										
		(609,574)	609,574										
		(609,997)	609,997										
		(6,845,873)	(434,837)	(2,774,811)	(2,149)	(692,925)	-	-	-	-	-	-	(10,750,595)
		2,624,324	306,405	1,672,371	935	230,030	-	-	-	-	-	-	4,834,065
		\$ 56,292,894	\$ 8,630,228	\$ 11,087,656	\$ 6,907,444	\$ 4,795,092	\$ 486,169	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 213,072,578
ACCUMULATED DEPRECIATION-ZONEGATING													
		\$ (1,471,048)	\$ -	\$ 110,083	\$ 45,268	\$ 787,197	\$ -	\$ 56	\$ -	\$ 528,444	\$ -	\$ -	\$ -
		(480,539)	-	40,770	16,334	253,530	-	72	-	169,833	-	-	-
		(2,374,100)	-	1,256,944	665,460	44,173	-	406,004	-	1,519	-	-	-
		(69,676)	-	8,552	4,098	31,356	-	11	-	25,659	-	-	-
		335,283	-	(1,544,867)	1,243,460	62,285	-	-	-	29,642	-	-	-
		(42,007)	-	22,240	11,774	782	-	7,184	-	27	-	-	-
		(145,946)	144,210	-	-	1,736	-	-	-	-	-	-	-
		(69,563)	-	5,206	2,141	37,224	-	3	-	24,989	-	-	-
		(20,556)	-	18,022	662	1,707	-	164	-	1	-	-	-
		72,776	-	(455,984)	302,663	35,917	-	-	-	44,628	-	-	-
		317,110	317,110	1,764,195	1,704,236	715,443	128,423	165,378	-	786,463	-	-	5,916,531
		(4,055,894)	\$ 461,320	\$ 1,225,161	\$ 3,996,096	\$ 1,969,614	\$ 130,159	\$ 578,872	\$ -	\$ 1,611,205	\$ -	\$ -	\$ 5,916,531
		\$ 52,236,998	\$ 9,091,548	\$ 12,312,817	\$ 10,903,540	\$ 6,764,706	\$ 616,328	\$ 578,872	\$ -	\$ 1,611,205	\$ -	\$ -	\$ 218,989,109

CITY OF GRAND RAPIDS, MICHIGAN
 WATER SUPPLY SYSTEM FUND
 ADJUSTED OPERATING EXPENSE ZONEGATED BY GOVERNMENTAL UNIT - TASK #22
 FISCAL YEAR ENDED JUNE 30, 2019

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	\$ 7,258,006	\$ 7,258,006											
PUMPING STATIONS:													
A. PRIMARY TRANSPORT	697,090	697,090											
B. INTERMEDIATE TRANSPORT	1,864,582		913,226	18,027	307,267	274,135	178,648		59,213				114,066
WATERMAINS:													
A. PRIMARY TRANSPORT	368,267		211,845	36,742	48,685	35,711	18,796		3,576				11,700
B. INTERMEDIATE TRANSPORT	1,893,852		697,789	397,766	326,955	272,506	143,308						23,522
C. LOCAL DISTRIBUTION	4,931,999		3,603,515	388,987	339,371	273,529	308,151						-
RETAIL CUSTOMER METERING *	3,698,925		2,751,890	302,461	254,005	175,033	202,331						-
SUBTOTAL OPERATING EXPENSE	20,712,722	7,955,096	8,178,266	1,143,983	1,276,283	1,030,914	851,234	64,869	62,789				149,288
ENGINEERING SERVICES	1,175,209	451,364	464,019	64,907	72,416	58,490	48,301	3,678	3,561				8,473
ADMINISTRATIVE EXPENSE	4,409,061	1,671,046	1,776,078	240,299	268,102	216,544	178,821	13,618	13,183				31,370
TOTAL	\$ 26,296,991	\$ 10,077,505	\$ 10,418,363	\$ 1,449,189	\$ 1,616,801	\$ 1,305,948	\$ 1,078,356	\$ 82,165	\$ 79,533				\$ 189,131

* 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%	100.00%											
B. INTERMEDIATE TRANSPORT	100.00%		48.977%	0.967%	16.479%	14.702%	9.581%		3.176%				6.118%
MEMO													
WATERMAINS													
TOTAL MILES:	1,186.67												
A. PRIMARY TRANSPORT	60.74		57.525%	9.977%	13.220%	9.697%	5.104%		0.971%				3.177%
MILES			34.94	6.06	8.03	5.89	3.10		0.59				1.93
B. INTERMEDIATE TRANSPORT	312.39		36.845%	21.003%	17.264%	14.389%	7.567%		1.690%				1.242%
MILES			115.10	65.61	53.93	44.95	23.64		5.28				3.88
C. LOCAL DISTRIBUTION	813.54		73.064%	7.887%	6.881%	5.546%	6.248%		0.374%				-
MILES			594.41	64.16	55.98	45.12	50.83		3.04				-
RETAIL CUSTOMER METERING (1)	80,037.00		74.397%	8.177%	6.867%	4.732%	5.470%		0.357%				-
NUMBER OF METERS			59,545.00	6,545.00	5,496.00	3,787.00	4,378.00		286.00				-
ENGINEERING SERVICES (2)		38.407%	39.484%	5.523%	6.162%	4.977%	4.110%		0.303%				0.721%
ADMINISTRATIVE EXPENSE (3)		37.901%	40.282%	5.450%	6.081%	4.911%	4.056%		0.299%				0.711%

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	\$ 25,778,878	65.4956%	\$ 605,051
CITY OF WALKER	3,294,766	8.3709%	77,331
CITY OF KENTWOOD	4,197,370	10.6641%	98,515
CASCADE TOWNSHIP	3,524,276	8.9540%	82,717
GRAND RAPIDS TOWNSHIP	2,352,676	5.9774%	55,219
TALLMADGE TOWNSHIP	211,744	0.5380%	4,970
	<u>\$ 39,359,710</u>	<u>100.0000%</u>	<u>\$ 923,803</u>

CITY OF GRAND RAPIDS, MICHIGAN
 WATER SUPPLY SYSTEM FUND
 ASSIGN DEPRECIATION EXPENSE TO CUSTOMER COMMUNITIES- TASK NO. 24
 FISCAL YEAR ENDED JUNE 30, 2019

COST CENTER	DEPRECIATION EXPENSE	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
BY PHYSICAL LOCATION- TASK 11		\$ 4,423,335	\$ 3,153,288	\$ 388,641	\$ 548,671	\$ 319,533	\$ 267,211	\$ 33,456				\$ 9,134,135
IN SERVICE- TASK 10		69,370	83,004	40,312	9,783	3,090	1,000	3,132				209,691
PUMPING STATIONS:												
KNAPP SERVICE CENTER	\$ 92,899		(55,674)	-	4,166	1,713	29,793	-	2	-	20,000	-
LIVINGSTON	71,481		(29,976)	-	2,543	1,019	15,815	-	5	-	10,594	-
FRANKLIN	314,611		(181,331)	-	96,004	50,827	3,374	-	31,010	-	116	-
LEFFINGWELL	908		(448)	-	55	26	202	-	-	-	165	-
BRISTOL	15,870			-				-	-	-		-
EAST PARIS	156,906		14,395	-	(106,157)	85,445	4,280	-	-	-	2,037	-
BURTON	12,447			-				-	-	-		-
COLDBROOK PS PUMP 2	12,976		(7,000)	-	3,707	1,962	130	-	1,197	-	4	-
STORAGE TANKS:												
ELKS	-		-	-	-	-	-	-	-	-	-	-
KNAPP	-		-	-	-	-	-	-	-	-	-	-
CAMBRIDGE	-		-	-	-	-	-	-	-	-	-	-
PATTERSON	101,837		12,150	-	(76,125)	50,529	5,996	-	-	-	7,450	-
WATERMANS			(202,620)	2,720	34,101	78,301	31,091	3,259	9,749	-	43,399	-
ADJUSTED BY ZONEGATING		4,492,705	2,785,788	431,673	516,748	592,445	358,892	39,847	41,963	-	83,765	9,343,826
LESS DEPR ON CIS (TASK 4/5)		(7,735)	(209,112)									(209,112)
LESS CONTRIBUTIONS AMORTIZED			(319,096)	(281,238)	(238,993)	(276,518)	(194,085)	(36,939)	-	-	-	(1,354,604)
TASK NO. 21		\$ 4,484,970	\$ 2,257,580	\$ 150,435	\$ 277,755	\$ 315,927	\$ 164,807	\$ 2,908	\$ 41,963	\$ -	\$ 83,765	\$ 7,780,110
TOTAL												

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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, 2019

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	\$ 10,077,505	\$ 10,418,363	\$ 1,449,189	\$ 1,616,801	\$ 1,305,948	\$ 1,078,356	\$ 82,165	\$ 79,533	\$ -	\$ 189,131	\$ 26,296,991	
DEPRECIATION EXPENSE TASK NO. 24	4,484,970	2,257,580	150,435	277,755	315,927	164,807	2,908	41,963	-	83,765	7,780,110	
RETURN ON SYSTEM INVESTMENT TASK NO. 21	4,287,270	6,042,725	392,627	807,087	877,631	530,760	24,462	91,086	-	271,622	13,325,270	
REVENUE CREDITS- TASK NO. 23	-	(605,051)	(77,331)	(98,515)	(82,717)	(55,219)	(4,970)	-	-	-	(923,803)	
ALLOCATE:												
INTEG CONN. FEE CREDIT (A)	-	(194,673)	(38,723)	(43,372)	(30,805)	(20,134)	(2,341)	(13,009)	-	(16,311)	(359,368)	
INTEGRATED SYSTEM (A)	(18,849,745)	9,156,060	1,821,219	2,039,897	1,448,802	946,949	110,066	611,818	1,947,787	767,147	-	
LESS: CIRCUIT BREAKER (B)		(36,337)	(146,396)	(31,503)	-	(151,967)	-	-	-	-	(366,203)	
	\$ -	\$ 27,038,667	\$ 3,551,020	\$ 4,568,150	\$ 3,834,786	\$ 2,493,552	\$ 212,290	\$ 811,391	\$ 1,947,787	\$ 1,295,354	\$ 45,752,997	

(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</u> <u>6/30/19</u>	<u>PRO FORMA *</u> <u>6/30/20</u>
REVENUES:		
RETAIL/WHOLESALE WATER SALES	\$ 43,426,473	\$ 42,902,471
CONNECTION FEES/FRONT FOOT FEES	645,414	575,000
BILLABLE TO SDS FUND	2,664,759	2,397,570
OTHER OPERATING REVENUES	1,887,007	1,631,500
INTEREST ON INVESTMENTS	874,413	812,605
MISCELLANEOUS	621,252	669,775
TOTAL REVENUES	<u>\$ 50,119,319</u>	<u>\$ 48,988,921</u>
OPERATING EXPENSES:		
OPERATIONS & MAINTENANCE	\$ 28,987,874	\$ 29,828,663
DEPRECIATION	9,346,793	9,346,793
TOTAL EXPENSES	<u>\$ 38,334,667</u>	<u>\$ 39,175,456</u>
ADDITIONS: DEPRECIATION	<u>9,346,793</u>	<u>9,346,793</u>
NET EARNINGS OF THE SYSTEM	<u>\$ 21,131,445</u>	<u>\$ 19,160,258</u>
DEBT SERVICE		
SERIES 2018 BONDS	\$ 3,904,767	\$ 5,702,600
SERIES 2016 BONDS	2,077,450	2,744,500
SERIES 2015 BONDS	2,253,500	2,254,250
SERIES 2013 BONDS	210,469	197,369
SERIES 2009 BONDS	743,600	-
SENIOR LIEN	9,189,786	10,898,719
JUNIOR LIEN **	1,640,948	1,641,710
TOTAL	<u>10,830,734</u>	<u>12,540,429</u>
COVERAGE RATIO - SENIOR DEBT	<u>2.30</u>	<u>1.76</u>
COVERAGE RATIO - ALL DEBT	<u>1.95</u>	<u>1.53</u>

* WATER SALES ADJUSTED FOR RATE REVISIONS OF 2.71% AND 2.47% EFFECTIVE 1/1/19 AND 1/1/20, RESPECTIVELY; OTHER REVENUES AND OPERATIONS & MAINTENANCE EXPENSE PER 2019 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		\$ 46,119,200
REVENUES FROM CURRENT RATES		
MONTHLY METER CHARGE	\$ 11,353,314	
MONTHLY BILLING CHARGE	3,433,230	
COMMODITY CHARGE	29,000,000	
MONTHLY FIRE PROTECTION	817,374	
ANNUAL HYDRANT CHARGE	<u>44,378</u>	<u>(44,648,297)</u>
INITIAL REQUIRED REVENUE INCREASE (DECREASE)		<u>\$ 1,470,903.00</u>
INITIAL PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES		<u>3.29%</u>
INITIAL SYSTEM REVENUE REQUIREMENTS FROM ABOVE	\$ 46,119,200	
LESS: AMOUNT OF CIRCUIT BREAKER RELIEF TO REDUCE RR's TO RETAIL	(366,203)	
SYSTEM REVENUE REQUIREMENTS		<u>\$ 45,752,997</u>
ACTUAL REQUIRED AMOUNT OF REVENUE INCREASE (DECREASE)		<u>\$ 1,104,700</u>
ACTUAL PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES		<u>2.47%</u>

CITY OF GRAND RAPIDS, MICHIGAN

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

SYSTEM REVENUE REQUIREMENTS \$ 27,038,667

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE

73,601 meter equivalents x \$ 7.24 x 12 = \$ 6,394,455

MONTHLY BILLING CHARGE

58,170 meters x \$ 3.70 x 12 = 2,582,748

COMMODITY CHARGE

8,493,136 units (100 CF) x \$ 1.98 = 16,816,409

MONTHLY FIRE PROTECTION

382,953

ANNUAL HYDRANT CHARGE

- (26,176,565)

REQUIRED REVENUE INCREASE (DECREASE)

\$ 862,102

PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES

3.29%

* REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 36,337

CITY OF GRAND RAPIDS, MICHIGAN

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

COMMODITY CHARGE:

$$\frac{\text{COMMODITY CHARGE @ 64\%}}{\text{BILLED UNITS}} = \frac{\$17,304,747}{8,493,136} = \underline{\underline{\$ 2.04 /100 CF *}}$$

MONTHLY SERVICE CHARGE:

SYSTEM REVENUE REQUIREMENTS **	\$ 27,038,667
NEW COMMODITY CHARGE 8,493,136 x \$ 2.04	\$ 17,325,997
NEW MONTHLY BILLING CHARGE 58,170 x \$ 3.99 x 12	2,785,180
MONTHLY FIRE PROTECTION CHARGE	382,953
ANNUAL HYDRANT CHARGE	-
	<u>(20,494,130)</u>
	<u><u>\$ 6,544,537</u></u>

$$\text{MONTHLY METER CHARGE} = \frac{\$6,544,537}{73,601 \times 12} = \underline{\underline{\$ 7.41 \text{ MONTHLY}}}$$

<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	\$ 7.41	\$ 3.99	\$ 11.40	\$ 10.94
1"	1.7778	13.17	3.99	17.16	16.57
1 1/4"	2.7778	20.58	3.99	24.57	23.81
1 1/2"	4.0000	29.64	3.99	33.63	32.66
2"	7.1111	52.69	3.99	56.68	55.18
3"	16.0000	118.56	3.99	122.55	119.54
4"	28.4444	210.77	3.99	214.76	209.64
6" and over	64.0000	474.24	3.99	478.23	467.06

* NEW RATES EFFECTIVE, ON A PRO-RATA BASIS, JANUARY 1, 2020

** REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 36,337

CITY OF WALKER, MICHIGAN

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

SYSTEM REVENUE REQUIREMENTS* \$ 3,551,020

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE

8,463 meter equivalents x \$ 9.44 x 12 = \$ 958,689

MONTHLY BILLING CHARGE

6,206 meters x \$ 3.70 x 12 = 275,546

COMMODITY CHARGE

1,231,466 units (100 CF) x \$ 1.70 = 2,093,492

MONTHLY FIRE PROTECTION

106,702

ANNUAL HYDRANT CHARGE

- (3,434,429)

REQUIRED REVENUE INCREASE (DECREASE)

\$ 116,591

PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES

3.39%

* REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 146,396

CITY OF KENTWOOD, MICHIGAN

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

SYSTEM REVENUE REQUIREMENTS \$ 4,568,150

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE

8,759 meter equivalents x \$ 11.24 x 12 = \$ 1,181,414

MONTHLY BILLING CHARGE

4,952 meters x \$ 3.70 x 12 = 219,869

COMMODITY CHARGE

1,797,862 units (100 CF) x \$ 1.58 = 2,840,622

MONTHLY FIRE PROTECTION

179,990

ANNUAL HYDRANT CHARGE

- (4,421,895)

REQUIRED REVENUE INCREASE (DECREASE)

\$ 146,255

PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES

3.31%

* REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 31,503

CITY OF KENTWOOD, MICHIGAN

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

COMMODITY CHARGE:

PRESENT CHARGE x RATE ADJUSTMENT \$ 1.63 /100 CF *
 \$ 1.58 x 103.31%

MONTHLY SERVICE CHARGE:

SYSTEM REVENUE REQUIREMENTS ** \$ 4,568,150

NEW COMMODITY CHARGE
 1,797,862 x \$ 1.63 \$ 2,930,515

NEW MONTHLY BILLING CHARGE
 4,952 x \$ 3.99 x 12 237,102

MONTHLY FIRE PROTECTION CHARGE 179,990

ANNUAL HYDRANT CHARGE - (3,347,607)

\$ 1,220,543

MONTHLY METER CHARGE = $\frac{\$1,220,543}{8,759 \times 12} = \underline{\underline{\$ 11.61 \text{ MONTHLY}}}$

METER SIZE	EQUIVALENT	MONTHLY SERVICE CHARGE			PRESENT
		METER	BILLING	TOTAL	
3/4" or less	1.0000	\$ 11.61	\$ 3.99	\$ 15.60	\$ 14.94
1"	1.7778	20.64	3.99	24.63	23.68
1 1/4"	2.7778	32.25	3.99	36.24	34.92
1 1/2"	4.0000	46.44	3.99	50.43	48.66
2"	7.1111	82.56	3.99	86.55	83.63
3"	16.0000	185.76	3.99	189.75	183.54
4"	28.4444	330.24	3.99	334.23	323.42
6" and over	64.0000	743.04	3.99	747.03	723.06

* NEW RATES EFFECTIVE, ON A PRO-RATA BASIS, JANUARY 1, 2020
 ** REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 31,503

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

SYSTEM REVENUE REQUIREMENTS* \$ 3,834,786

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE			
	5,341 meter equivalents x \$ 19.43 x 12 = \$	1,245,308	
MONTHLY BILLING CHARGE			
	3,479 meters x \$ 3.70 x 12 =	154,468	
COMMODITY CHARGE			
	955,420 units (100 CF) x \$ 2.41 =	2,302,562	
MONTHLY FIRE PROTECTION		108,272	
ANNUAL HYDRANT CHARGE		-	<u>(3,810,610)</u>
REQUIRED REVENUE INCREASE (DECREASE)			<u>\$ 24,176</u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES			<u>0.63%</u>

CASCADE TOWNSHIP

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

COMMODITY CHARGE:

PRESENT CHARGE x RATE ADJUSTMENT \$ 2.43 /100 CF *
 \$ 2.41 x 100.63%

MONTHLY SERVICE CHARGE:

SYSTEM REVENUE REQUIREMENTS	\$ 3,834,786
NEW COMMODITY CHARGE 955,420 x \$ 2.43	\$ 2,321,671
NEW MONTHLY BILLING CHARGE 3,479 x \$ 3.99 x 12	166,575
MONTHLY FIRE PROTECTION CHARGE	108,272
ANNUAL HYDRANT CHARGE	<u>-</u> (2,596,518)
	<u><u>\$ 1,238,268</u></u>

MONTHLY METER CHARGE = $\frac{\$1,238,268}{5,341 \times 12} = \underline{\underline{\$ 19.32 \text{ MONTHLY}}}$

<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	\$ 19.32	\$ 3.99	\$ 23.31	\$ 23.13
1"	1.7778	34.35	3.99	38.34	38.24
1 1/4"	2.7778	53.67	3.99	57.66	57.67
1 1/2"	4.0000	77.28	3.99	81.27	81.42
2"	7.1111	137.39	3.99	141.38	141.87
3"	16.0000	309.12	3.99	313.11	314.58
4"	28.4444	549.55	3.99	553.54	556.37
6" and over	64.0000	1,236.48	3.99	1,240.47	1,247.22

* NEW RATES EFFECTIVE, ON A PRO-RATA BASIS, JANUARY 1, 2020

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

SYSTEM REVENUE REQUIREMENTS* \$ 2,493,552

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE					
5,435 meter equivalents	x	\$ 12.82	x	12 =	\$ 836,120
MONTHLY BILLING CHARGE					
4,257 meters	x	\$ 3.70	x	12 =	189,011
COMMODITY CHARGE					
704,947 units (100 CF)	x	\$ 1.92	=		1,353,498
MONTHLY FIRE PROTECTION					31,882
ANNUAL HYDRANT CHARGE				-	<u>(2,410,511)</u>
REQUIRED REVENUE INCREASE (DECREASE)					<u>\$ 83,041</u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES					<u>3.44%</u>

* REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 151,967

TALLMADGE TOWNSHIP

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

SYSTEM REVENUE REQUIREMENTS \$ 212,290

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE

356 meter equivalents x \$ 2.75 x 12 = \$ 11,748

MONTHLY BILLING CHARGE

261 meters x \$ 3.70 x 12 = 11,588

COMMODITY CHARGE

48,878 units (100 CF) x \$ 3.38 = 165,208

MONTHLY FIRE PROTECTION

7,574

ANNUAL HYDRANT CHARGE

44,378

(240,497)

REQUIRED REVENUE INCREASE (DECREASE)

\$ (28,207)

PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES

-11.73%

TALLMADGE TOWNSHIP

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

COMMODITY CHARGE:

PRESENT CHARGE x RATE ADJUSTMENT \$ 2.98 /100 CF *
 \$ 3.38 x 88.27%

MONTHLY SERVICE CHARGE:

SYSTEM REVENUE REQUIREMENTS		\$ 212,290
NEW COMMODITY CHARGE		
48,878 x \$ 2.98	\$	145,656
NEW MONTHLY BILLING CHARGE		
261 x \$ 3.99 x 12		12,497
MONTHLY FIRE PROTECTION CHARGE		7,574
ANNUAL HYDRANT CHARGE		<u>44,378</u>
		<u>(210,106)</u>
		<u>\$ 2,184</u>

MONTHLY METER CHARGE = $\frac{\$2,184}{356 \times 12} = \underline{\underline{\$ 0.51 \text{ MONTHLY}}}$

METER SIZE	EQUIVALENT	MONTHLY SERVICE CHARGE			PRESENT
		METER	BILLING	TOTAL	
3/4" or less	1.0000	\$ 0.51	\$ 3.99	\$ 4.50	\$ 6.45
1"	1.7778	0.91	3.99	4.90	\$ 8.59
1 1/4"	2.7778	1.42	3.99	5.41	\$ 11.34
1 1/2"	4.0000	2.04	3.99	6.03	\$ 14.70
2"	7.1111	3.63	3.99	7.62	\$ 23.26
3"	16.0000	8.16	3.99	12.15	\$ 47.70
4"	28.4444	14.51	3.99	18.50	\$ 81.92
6" and over	64.0000	32.64	3.99	36.63	\$ 179.70

* NEW RATES EFFECTIVE, ON A PRO-RATA BASIS, JANUARY 1, 2020

CITY OF EAST GRAND RAPIDS, MICHIGAN

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

INTEGRATED SYSTEM REVENUE REQUIREMENTS *		\$	598,809
COMMODITY CHARGE			
(100CF) 558,136 units	x	\$ 1.11	619,531
			<hr/>
REQUIRED COMMODITY REVENUE INCREASE (DECREASE)		\$	<u><u>(20,722)</u></u>
NON-INTEGRATED SYSTEM REVENUE REQUIREMENTS		\$	212,582
MONTHLY SERVICE CHARGE			
\$17,209	x	12 MONTHS	206,508
			<hr/>
REQUIRED SERVICE REVENUE INCREASE (DECREASE)		\$	<u><u>6,074</u></u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES			<u><u>-1.77%</u></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	\$	811,391
NEW COMMODITY CHARGE *		
558,136 x \$1.07 =		(597,206)
		<hr/>
	\$	<u>214,185</u>

MONTHLY SERVICE CHARGE * = \$214,185 / 12 = \$17,849

* NEW RATES EFFECTIVE ON JANUARY 1, 2020

ADA TOWNSHIP

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

INTEGRATED SYSTEM REVENUE REQUIREMENTS *		\$	750,836
COMMODITY CHARGE			
(100CF) 616,741 units	x	\$ 1.25	770,926
			<hr/>
REQUIRED COMMODITY REVENUE INCREASE (DECREASE)		\$	<u><u>(20,090)</u></u>
NON-INTEGRATED SYSTEM REVENUE REQUIREMENTS		\$	544,518
MONTHLY SERVICE CHARGE			
\$42,811	x	12 MONTHS	513,732
			<hr/>
REQUIRED SERVICE REVENUE INCREASE (DECREASE)		\$	<u><u>30,786</u></u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES			<u><u>0.83%</u></u>

* NET OF INTEGRATED CONNECTION FEE CREDIT.

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

SYSTEM REVENUE REQUIREMENTS	\$ 1,295,354
NEW COMMODITY CHARGE *	
616,741 x \$1.22 =	(752,424)
	<hr/>
	<u>\$ 542,930</u>

MONTHLY SERVICE CHARGE * = \$ 542,930 / 12 = \$45,244

* NEW RATES EFFECTIVE ON JANUARY 1, 2020

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

INTEGRATED SYSTEM REVENUE REQUIREMENTS					\$ 1,947,787
COMMODITY CHARGE					
(100CF)	1,712,397	units	x	\$ 1.19	2,037,752
					<hr/>
REQUIRED COMMODITY REVENUE INCREASE (DECREASE)					<u>\$ (89,965)</u>
NON-INTEGRATED SYSTEM REVENUE REQUIREMENTS					\$ -
MONTHLY SERVICE CHARGE					
	\$445		x	12 MONTHS	5,340
					<hr/>
REQUIRED SERVICE REVENUE INCREASE (DECREASE)					<u>\$ (5,340)</u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES					<u>-4.66%</u>

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

SYSTEM REVENUE REQUIREMENTS \$ 1,947,787

NEW COMMODITY CHARGE *
1,712,397 x \$1.14 = (1,952,133)

\$ (4,346)

MONTHLY SERVICE CHARGE * = \$ - / 12 = \$0

* NEW RATES EFFECTIVE ON JANUARY 1, 2020

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	2019 Rate	2020 Rate	% Change
Domestic	Property is domicile for single or multiple family use, such as homes, apartments, duplexes, condominium, etc.	\$ 100.00	\$ 100.00	0.00%
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).	\$ 140.00	\$ 140.00	0.00%

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, 2018 through June 30, 2019. 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	2019	\$ 2,800	\$ 3,300	\$ 3,500	\$ 4,000	\$ 5,000
	2020	\$ 2,900	\$ 3,300	\$ 3,500	\$ 4,100	\$ 4,900
1-1/2" Water Service	2019	\$ 3,800	\$ 4,300	\$ 4,600	\$ 5,200	\$ 6,100
	2020	\$ 3,800	\$ 4,300	\$ 4,500	\$ 5,100	\$ 6,000
2" Water Service	2019	\$ 4,300	\$ 4,400	\$ 5,200	\$ 5,800	\$ 6,900
	2020	\$ 4,400	\$ 4,900	\$ 5,200	\$ 6,000	\$ 7,000

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	3.57%	0.00%	0.00%	2.50%	-2.00%
1-1/2" Water Service	0.00%	0.00%	-2.17%	-1.92%	-1.64%
2" Water Service	2.33%	11.36%	0.00%	3.45%	1.45%

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 17, 2019

TO: Molly J. Clarin
Fiscal Services Manager

FROM: Samarhia Giffel, Administrative Services Officer

SUBJECT: 2019 WATER RATE STUDY TASK #30
FEES, CHARGES, and PENALTIES

Fees, charges, and penalties contained within the Water System Rules and Regulations have been reviewed with staff.

Minor wording changes were made for clarification and enforcement purposes. Please see the attached fee, charges, and penalties schedule in entirety. The following are recommended changes in fee amounts, aligned to support resource requirements:

Fire Protection Monthly

- Fee increase of 3.5% for all sizes based on BBI and inflation

Hydrant Use Per Season

- Note added: A \$100 Service fee will apply for all hydrant connection assistance requests

Meter Installation and Service On/Off Requests

- Inspection/Repair Scheduled on & Off Request increased 16.67% (\$70) to account for both service trips and associated work

Meter Reading

- Final or Actual Reading increased 22.2% (\$55)
- Meter Interface Unit Replacement (includes Smart Endpoint) increased 3.33% (\$155)

Meter Testing

- Test fee for 1" increased 50% (\$150) to match the cost of the meter testing fee per current Sensus bid
- Test fee for 2" increased 16.6% (\$350) to match the cost of the meter testing fee per current Sensus bid
- Note added: In addition to the Meter Testing fee a Service on/off Request fee applies

Meter Replacement (Non-System Planned/Scheduled Replacement)

- T2 Omni Meter
 - 1 ½” meter decreased 6.25% (\$750) to match the cost of the meter per current Sensus bid
 - 2” meter decreased 2.22% (\$880) to match the cost of the meter per current Sensus bid
- C2 Omni Meter
 - 1 ½” meter increased 50% (\$1200) to match the cost of the meter per current Sensus bid
 - 2” meter increased 53.9% (\$1385) to match the cost of the meter per current Sensus bid
 - 3” meter increased 59.5% (\$1755) to match the cost of the meter per current Sensus bid
- Note added: In addition to the Meter Replacement fee a Meter Installation fee applies

Miscellaneous

- Fees increased and aligned to support resources requirements

Miscellaneous			
Street Opening Permit (Water/ESD, City Engineering, Streets)	\$100	\$300	200%
Water Inspection Permit (Within City Limits)	\$70	\$75	7.14%
Water Inspection Permit (Outside City Limits)	\$85	\$90	5.88%
Sanitary Service Line Inspection Permit (Within City Limits)	\$70	\$75	7.14%
Sanitary Service Line Inspection Permit (Outside City Limits)	\$85	\$90	5.88%
Storm Service Line Inspection Permit (Within City Limits)	\$70	\$75	7.14%
Storm Service Line Inspection Permit (Outside City Limits)	\$85	\$90	5.88%
Footing Drain Lateral Inspection Permit (Within City Limits)	\$70	\$75	7.14%
Footing Drain Lateral Inspection Permit (Outside City Limits)	\$85	\$90	5.88%
Sewer Lateral Service Demolition/Cap off Inspection Fee (Within City Limits)	\$70	\$75	7.14%
Sewer Later Service Demolition/Cap off Inspection Fee (Outside City Limits)	\$85	\$90	5.88%
Plumbing Service Re-inspection Fee	\$70	\$75	7.14%
Cross Connection Re-inspection Fee	\$75	\$75	0%

Services

- Hydrant connection assistances added as a request example

Penalties

- Missed appointment fee increased 11.1% (\$50) and aligned to support resources requirements

SG

Cc: Dave Harran, Water System Manager
 Chuck Schroeder, Acting Environmental Services Manager
 Wayne Jernberg, Assistant Water System Manager
 Arden Postma, Hydraulic Engineer
 Chad Reul, Utility Field Operations Superintendent

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

Fees, Charges, and Penalties	2019 Fee (\$)	2020 Fee (\$)	% Change
Fire Protection Monthly (based on pipe size)			
6"	\$18.94	\$19.60	3.5%*
8"	\$33.62	\$34.79	3.5%*
10"	\$52.66	\$54.50	3.5%*
12"	\$75.77	\$78.42	3.5%*

*BBI and Inflation

Hydrant Use Per Season			
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)
A \$100 Services fee applies for all hydrant connection assistance requests

Tapping Permits			
All sizes	\$375	\$375	0%

Meter Installation and Service On/Off Requests			
<i>All non-emergency service requests must be scheduled (normal service Hours 8am - 7pm M-F)</i>			
All sizes	\$50	\$50	0%
Inspection/Repair Scheduled On & Off Request (may also need meter install)	\$60	\$70	16.67%

Meter Reading			
Final or Actual Reading	\$45	\$55	22.2%
Meter Interface Unit Replacement (includes Smart Endpoint Device)	\$150	\$155	3.33%

Meter Testing			
<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>			
<i>*In addition to the Meter Testing fee a Service On/Off Requests fee applies.</i>			
¾" and 1"	\$100	\$150	50%
1 ½"	\$200	\$200	0%
2"	\$300	\$350	16.6%
3"	\$400	\$400	0%
4" or larger	Cost	Cost	0%

Security Deposit			
Minimum Deposit Amount	\$500	\$500	0%

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

Fees, Charges, and Penalties

2019 Fee (\$) **2020 Fee (\$)** **% Change**

Meter Replacement (Non-System Planned/Scheduled Replacement)

*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. *In addition to the Meter Replacement fee a Meter Installation fee applies.*

	2019 Fee (\$)	2020 Fee (\$)	% Change
¾"	\$210	\$210	0%
1"	\$250	\$250	0%

T2 Omni Meter			
	2019 Fee (\$)	2020 Fee (\$)	% Change
1 ½"	\$800	\$750	-6.25%
2"	\$900	\$880	-2.22%
3"	\$1,100	\$1,100	0%
4" or larger	Cost	Cost	0%

C2 Omni Meter			
	2019 Fee (\$)	2020 Fee (\$)	% Change
1 ½"	\$800	\$1200	50%
2"	\$900	\$1385	53.9%
3"	\$1,100	\$1,755	59.5%
4" or larger	Cost	Cost	0%

Miscellaneous

	2019 Fee (\$)	2020 Fee (\$)	% Change
Street Opening Permit (Water/ESD, City Engineering, Streets)	\$100	\$300	200%
Water Inspection Permit (Within City Limits)	\$70	\$75	7.14%
Water Inspection Permit (Outside City Limits)	\$85	\$90	5.88%
Sanitary Service Line Inspection Permit (Within City Limits)	\$70	\$75	7.14%
Sanitary Service Line Inspection Permit (Outside City Limits)	\$85	\$90	5.88%
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Sewer Lateral Service Demolition/Cap off Inspection Fee (Within City Limits)	\$70	\$75	7.14%
Sewer Later Service Demolition/Cap off Inspection Fee (Outside City Limits)	\$85	\$90	5.88%
Plumbing Service Re-inspection Fee	\$70	\$75	7.14%
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

Fees, Charges, and Penalties	2019 Fee (\$)	2020 Fee (\$)	% Change
Miscellaneous Cont...			
Irrigation Service Cut/Cap Administrative Fee	\$65	\$65	0%
Delinquent Commercial Backflow Test Fee (Per Device)	\$25	\$25	0%
Hydrant Flow Test	\$200	\$200	0%

Services			
Customer requested on-site service visit (hydrant connection assistance requests, internal plumbing, customer issue)	\$100	\$100	0%

Penalties			
Late Payment Penalty	10% of Net	10% of Net	0%
Return check or payment charge (City Treasurer processing fee)	\$30	\$30	0%
Administrative/Research Fee (Review or processing of account for non-payment, returned payment, shut-off, posting of property, and/or backflow non-compliance) (Documentation creation for account of location information- FOIA request may still be required)	\$55	\$55	0%
Missed Appointment	\$45	\$50	11.1%
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 stops & box) ** & ***	\$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**

Miscellaneous Damage or Loss			
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: September 05, 2019

TO: Molly Clarin
Fiscal Services Manager

FROM: Arden Postma, P.E.
Hydraulic Engineer

SUBJECT: **2019 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>2018 Rate</u>	<u>2019 Rate</u>	<u>2020 Rate</u>	<u>'19 - '20 % Change</u>
8"-12"	\$24.51/ft	\$26.40/ft	\$27.47/ft	4.0%
12"-16"	\$26.79/ft	\$32.24/ft	\$33.90/ft	5.1%
8"-16"	\$51.30/ft	\$58.64/ft	\$61.37/ft	4.7%

These rates have been determined in accordance with the Water System Rules and Regulations, and are approved for use from January 1, 2020 through December 31, 2020. 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, 2019 :

UAB Partners	Sq. Miles of USD by CC	Percent
Grand Rapids	45.36	35.042%
Walker	25.48	19.684%
Kentwood	13.50	10.429%
Cascade	21.14	16.331%
Grand Rapids Township	10.93	8.441%
Tallmadge Township	2.46	1.900%
East Grand Rapids	3.37	2.603%
Ada	7.21	5.570%
Total	129.45	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)*	\$ 132,315	26.54%
City & Customer Community Circuit Breaker (CCCCB)	366,203	73.46%
Total	<u>\$ 498,518</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	\$ 366,203	100.00%
Less: Amount Applied in Current Rate Study	(366,203)	-100.00%
Total CCCCCB Revenue Credit- Next Year's Rate Study	<u>\$ (0)</u>	<u>0.00%</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. \$132,315 includes \$80,000 of facility rental revenue from fiscal year 2019 to supplement the 2020 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, 2019
TASKS NO. 1, 2, & 3**

COMMUNITY	LOCAL		TRUNK		INTERCEPTOR		TOTALS	
	FEET	MILES	FEET	MILES	FEET	MILES	FEET	MILES
Grand Rapids								
Construction	2,378	0.45	4,107	0.78	303	0.06	6,788	1.29
Abandonment	(2,814)	(0.53)	(742)	(0.14)	(1,775)	(0.34)	(5,331)	(1.01)
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
	(436)	(0.08)	3,365	0.64	(1,472)	(0.28)	1,457	0.28
Kentwood								
Construction	2,337	0.44	1,900	0.36	0	0.00	4,237	0.80
Abandonment	0	0.00	0	0.00	0	0.00	0	0.00
	2,337	0.44	1,900	0.36	0	0.00	4,237	0.80
Cascade 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
	0	0.00	0	0.00	0	0.00	0	0.00
G.R. 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
	0	0.00	0	0.00	0	0.00	0	0.00
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
	0	0.00	0	0.00	0	0.00	0	0.00
Walker								
Construction	293	0.06	0	0.00	0	0.00	293	0.06
Abandonment	0	0.00	0	0.00	0	0.00	0	0.00
	293	0.06	0	0.00	0	0.00	293	0.06
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
	0	0.00	0	0.00	0	0.00	0	0.00
TOTAL	2,194	0.42	5,265	1.00	(1,472)	(0.28)	5,987	1.14

	CONTRIBUTIONS		
	COMM	OTHER	TOTAL
Integrated	\$ -	\$ -	\$ -
Grand Rapids	186,629	-	186,629
Kentwood	523,150	-	523,150
Cascade Twp.	112,348	-	112,348
Grand Rapids Twp.	494,030	-	494,030
Tallmadge Twp.	373,296	-	373,296
Walker	-	-	-
Wright Twp.	-	-	-
TOTAL	\$ 1,689,453	\$ -	\$ 1,689,453

CITY OF GRAND RAPIDS, MICHIGAN
SEWAGE DISPOSAL SYSTEM FUND
OPERATING EXPENSE ALLOCATION BY COST CENTER - TASK #4, PART 1
FISCAL YEAR ENDED JUNE 30, 2019

Dept-Unit-Fund	ACTIVITY	WASTEWATER TREATMENT PLANT		WASTEWATER LIFT STATIONS			SEWER LINES			BULK METERING STATIONS	CUSTOMER ACCOUNTING	INDUSTRIAL PRETREAT.	ADMIN. EXPENSE
		EXPENSE BY ACTIVITY	INTERCEPTOR	TRUNK	LOCAL COLLECTOR	INTERCEPTOR	TRUNK	LOCAL COLLECTOR	TRUNK				
527 (3000:70) 5900	WASTEWATER TREATMENT (LESS 527 - 3040 - 5900)	\$ 18,774,744	\$ 253,752	\$ 164,629	\$ 514,207				\$ 5,391				
527 (4000 / 4290) 5900	SEWER MAINTENANCE	5,246,870				273,677	617,504	4,355,689		2,664,759	709,342		
527 (2000) 5900	CUSTOMER SERVICE*	2,664,759											
527 (3040) 5900	INDUSTRIAL PRETREATMENT	709,342											
527 (1000:10 / 8000) 5900	SUBTOTAL OPERATING EXPENSE ADMINISTRATION	27,395,715	253,752	164,629	514,207	273,677	617,504	4,355,689	5,391	2,664,759	709,342		
	TOTAL	\$ 30,331,893	\$ 253,752	\$ 164,629	\$ 514,207	\$ 273,677	\$ 617,504	\$ 4,355,689	\$ 5,391	\$ 2,664,759	\$ 709,342	\$ 2,936,178	

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

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	95.004%						
527 (4000 / 4290) 5900	B. LIFT & METER STATIONS	4.996%			(3)			
	NO. OF STATIONS	(57)	(1)	(8)	(45)			
	SEWER MAINTENANCE							
	TOTAL MILES	921.21						
527 (2000) 5900	A. INTERCEPTOR MILES	5.216%						
527 (3040) 5900	B. TRUNK LINES MILES	11.769%		11.769%				
527 (1000:10 / 8000) 5900	C. LOCAL COLLECTOR MILES	83.015%						
	CUSTOMER SERVICE	100.000%				100.000%		
	INDUSTRIAL PRETREATMENT	100.000%					100.000%	
	ADMINISTRATION	100.000%						100.000%

CITY OF GRAND RAPIDS, MICHIGAN
SEWAGE DISPOSAL SYSTEM FUND
OPERATING EXPENSE ALLOCATION BY GOVERNMENTAL UNIT - TASK #4, PART 2
FISCAL YEAR ENDED JUNE 30, 2019

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	WRIGHT TOWNSHIP	CITY OF EAST GR	CALEDONIA TOWNSHIP	ADA TOWNSHIP	GAINES TOWNSHIP	
WASTEWATER TREATMENT	\$ 17,836,766	\$ 17,836,766												
LIFT STATIONS:														
A. INTERCEPTOR	253,752													
B. TRUNK	164,629		69,578				26,705	9,993						
C. LOCAL COLLECTOR	514,207		72,211				98,810	195,701	31,946	7,575			32,884	
SEWER LINES:														
A. INTERCEPTOR	273,677		39,357		69,544		7,633							
B. TRUNK	617,504		152,011		143,125		55,186	31,554	16,117	685				
C. LOCAL COLLECTOR	4,355,689		333,157		425,769		265,087	334,952	49,394	25,611				
BULK METERING STATIONS	5,391				3,020							1,440		931
CUSTOMER ACCOUNTING	2,664,759		204,813		167,533		71,309	136,356	8,847	8,181				
INDUSTRIAL PRETREATMENT	709,342													
SUBTOTAL OPERATING EXPENSE	27,395,715	18,546,108	871,127	808,991	808,991	524,730	708,556	106,304	42,052	1,440		32,884		931
ADMINISTRATIVE EXPENSE	2,936,178	1,948,326	662,502	91,514	84,987	55,124	74,436	11,168	4,418	151		3,454		98
TOTAL	\$ 30,331,893	\$ 20,494,434	\$ 6,415,094	\$ 893,978	\$ 893,978	\$ 579,854	\$ 782,992	\$ 117,472	\$ 46,470	\$ 1,591	\$ -	\$ 36,338	\$ -	\$ 1,029

METHOD OF DISTRIBUTION

WASTEWATER TREATMENT															
A. TREATMENT PLANT	100.000%	100.00%													
B. LIFT & METER STATIONS (1)	100.000%		(13)	(6)	(1)	(10)	(18)	(5)	(1)	(1)	(1)	(1)		(1)	
SEWER LINES:															
TOTAL MILES:	921.21														
A. INTERCEPTOR MILES	48.05		57,419%	14,381%	25,411%	2,789%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	
B. TRUNK LINES MILES	108.42		27,59	6,91	12,21	1,34	5,110%	2,610%	0.111%	0.000%	0.000%	0.000%	0.000%	0.000%	
C. LOCAL COLLECTOR MILES	764.74		35,437%	24,617%	23,178%	8,937%	5,110%	2,83	0.12	0.111%	0.000%	0.000%	0.000%	0.000%	
CUSTOMER ACCTG (2)	75,342.00		38,42	26,69	25,13	9,69	5,54	1,134%	0.588%	0.000%	0.000%	0.000%	0.000%	0.000%	
INDUSTRIAL PRETREATMENT		100.00%	62,161%	12,566%	9,775%	6,086%	7,690%	8,67	4,50						
ADMINISTRATIVE EXPENSE (3)		100.00%	475,37	96,10	74,75	46,54	58,81								
		100.00%	77,902%	7,686%	6,287%	2,676%	5,117%	0.332%	0.307%						
		100.00%	58,462.00	5,791.00	4,737.00	2,016.00	3,855.00	250.00	231.00						
		100.00%	22,563%	3,117%	2,894%	1,877%	2,535%	0.380%	0.150%	0.005%	0.000%	0.118%	0.003%		

NOTES:

- (1) 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 OPERATING EXPENSE ALLOCATION BY COST CENTER - TASK #5, PART 1
FISCAL YEAR ENDED JUNE 30, 2019

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	INTERCEPTOR	TRUNK	LOCAL COLLECTOR	INTERCEPTOR	TRUNK	LOCAL COLLECTOR	INTERCEPTOR	TRUNK				
527 (3000:70) 5900	WASTEWATER TREATMENT (LESS 527 - 3040 - 5900)	\$ 18,072,991	\$ 17,135,013	\$ 253,752	\$ 164,630	\$ 514,205					\$ 5,391			
527 (4000 / 4290) 5900	SEWER MAINTENANCE	5,247,109												
527 (2000) 5900	CUSTOMER SERVICE *	3,484,849										3,484,849		
527 (3040) 5900	INDUSTRIAL PRETREATMENT	721,810										721,810		
527 (1000:10 / 8000) 5900	SUBTOTAL OPERATING EXPENSE ADMINISTRATION	27,526,759	17,135,013	253,752	164,630	514,205	273,689	617,532	617,532	4,355,888	5,391	3,484,849	721,810	
	TOTAL	\$ 30,407,883	\$ 17,135,013	\$ 253,752	\$ 164,630	\$ 514,205	\$ 273,689	\$ 617,532	\$ 617,532	\$ 4,355,888	\$ 5,391	\$ 3,484,849	\$ 721,810	\$ 2,881,124

* 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		94.810%											
	B. LIFT & METER STATIONS	(57)	5.190%		(8)	(45)					(3)			
527 (4000 / 4290) 5900	SEWER MAINTENANCE	921.21												
	TOTAL MILES													
	A. INTERCEPTOR MILES	48.05	5.216%				5.216%							
	B. TRUNK LINES MILES	108.42	11.769%				11.769%							
	C. LOCAL COLLECTOR MILES	764.74	83.015%				83.015%							
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, 2019

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	\$ 17,135,013	\$ 17,135,013												
LIFT STATIONS:														
A. INTERCEPTOR	253,752													
B. TRUNK	164,630		69,578				26,705	9,993						
C. LOCAL COLLECTOR	514,205		72,211				98,810	195,701	31,946	7,575			32,884	
SEWER LINES:														
A. INTERCEPTOR	273,689		39,359		69,547		7,633							
B. TRUNK	617,532		152,018		143,132		55,189	31,556	16,118	685				
C. LOCAL COLLECTOR	4,355,888		547,361		425,788		265,099	334,968	49,396	25,613				
BULK METERING STATIONS	5,391				3,020							1,440		931
CUSTOMER ACCOUNTING	3,484,849		267,845		219,092		93,255	178,320	11,570	10,698				
INDUSTRIAL PRETREATMENT	721,810	721,810												
SUBTOTAL OPERATING EXPENSE	27,526,759	17,856,823	6,174,900	1,148,372	860,579	546,691	750,538	109,030	44,571	1,440		32,884		931
ADMINISTRATIVE EXPENSE	2,881,124	1,831,270	691,428	117,769	88,255	56,065	76,970	11,181	4,571	148		3,372		95
TOTAL	\$ 30,407,883	\$ 19,688,093	\$ 6,866,328	\$ 1,266,141	\$ 948,834	\$ 602,756	\$ 827,508	\$ 120,211	\$ 49,142	\$ 1,588	\$ -	\$ 36,256	\$ -	\$ 1,026

METHOD OF DISTRIBUTION

WASTEWATER TREATMENT															
A. TREATMENT PLANT	100.000%	100.000%													
B. LIFT & METER STATIONS (1)	100.000%		(13)	(6)	(1)	(10)	(18)	(5)	(1)	(1)		(1)		(1)	
NO. OF STATIONS															
SEWER LINES:															
TOTAL MILES:	921.21														
A. INTERCEPTOR	100.000%	57,419%	14,381%	25,411%	2,789%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
MILES	48.05	27.59	6.91	12.21	1.34										
B. TRUNK LINES	100.000%	35,437%	24,617%	23,178%	8,937%	5,110%	5,110%	2,610%	0.11%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
MILES	108.42	38.42	26.69	25.13	9.69	5.54	5.54	2.83	0.12	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
C. LOCAL COLLECTOR	100.000%	62,161%	12,566%	9,775%	6,086%	7,690%	58.81	1,134%	0.588%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
MILES	764.74	475.37	96.10	74.75	46.54	8.67	4.50	8.67	4.50	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
CUSTOMER ACCTG (2)	100.000%	77,595%	7,686%	6,287%	2,676%	5,117%	5,117%	0.332%	0.307%	0.005%	0.000%	0.117%	0.000%	0.003%	
NO. OF METERS	75,342.00	58,462.00	5,791.00	4,737.00	2,016.00	3,855.00	3,855.00	250.00	231.00	0.005%	0.000%	0.117%	0.000%	0.003%	
INDUSTRIAL PRETREATMENT	100.000%	100.000%													
ADMINISTRATIVE EXPENSE (3)	100.000%	63,560%	23,999%	4,088%	3,063%	1,946%	2,672%	0.388%	0.159%	0.005%	0.000%	0.117%	0.000%	0.003%	

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, 2019
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	\$ 316,024.75	\$ 10,681.64	\$ 326,706.39
7105	EMPLOYERS SOCIAL SECURITY	21,858.53	738.82	22,597.35
7110	HOSPITALIZATION INSURANCE	58,665.35	7,004.64	65,669.99
7115	RETIREE HEALTH CARE	38,404.53	(10,680.30)	27,724.23
7120	RETIREMENT FUND CONTRIBUTION	71,764.96	2,999.78	74,764.74
7135	UNEMPLOYMENT COMPENSATION	430.65	-	430.65
	TOTAL PERSONAL SERVICES	<u>507,148.77</u>	<u>10,744.58</u>	<u>517,893.35</u>
7520	SUPPLIES	1,836.30	-	1,836.30
	TOTAL SUPPLIES	<u>1,836.30</u>	<u>-</u>	<u>1,836.30</u>
7175	FOOD/CLEAN/CAR ALLOW	2,802.00	-	2,802.00
8010	CONTRACTUAL SERVICES	115,423.43	-	115,423.43
8011	CONTRACT EMPLOYEES - TEMP SERVICES	15,411.28	-	15,411.28
8030	ADMINISTRATIVE SERVICES	81,895.37	(81,895.37)	-
8240	FEES	42.25	-	42.25
8400	INSURANCE PREMIUMS	181,033.00	48,378.00	229,411.00
8450	GENERAL LIABILITY INSURANCE/CLAIMS	380,915.00	9,672.00	390,587.00
8500	TELEPHONE	1,261.23	-	1,261.23
9000	PRINTING & PUBLISHING	313.56	-	313.56
9010	ADVERTISING - ANY MEDIA	4,750.00	-	4,750.00
9100	PROFESSIONAL DEVELOPMENT	347.98	-	347.98
9110	OTHER TRAVEL & TRAINING	3,566.84	-	3,566.84
9130	LOCAL BUSINESS EXPENSE	590.00	-	590.00
9150	MEMBERSHIPS	37,782.00	-	37,782.00
9410	EQUIPMENT RENTALS OR LEASE	1,302.42	-	1,302.42
9430	BUILDINGS RENTALS OR LEASE	28,458.00	-	28,458.00
9450	311 CALL CENTER SERVICES	932.00	-	932.00
9460	ENGINEERING SERVICES	6,745.00	-	6,745.00
9470	VEHICLE USAGE/CAR MILAGE	6,154.63	-	6,154.63
9480	COMPUTER SERVICES	14,769.96	2,547.04	17,317.00
	TOTAL OTHER SERVICES & CHARGES	<u>884,495.95</u>	<u>(21,298.33)</u>	<u>863,197.62</u>
9760	EQUIPMENT	3,589.66	-	3,589.66
9880	CONSTRUCTION IN PROGRESS	819,650.65	-	819,650.65
	TOTAL CAPITAL	<u>823,240.31</u>	<u>-</u>	<u>823,240.31</u>
9510	A-87 COST ALLOCATION	719,457.00	(44,501.00)	674,956.00
	TOTAL TRANSFERS/FEES	<u>719,457.00</u>	<u>(44,501.00)</u>	<u>674,956.00</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 2,936,178.33</u>	<u>\$ (55,054.75)</u>	<u>\$ 2,881,123.58</u>

**CITY OF GRAND RAPIDS, MICHIGAN
SEWAGE DISPOSAL SYSTEM FUND
ADJUSTED ACTUAL EXPENSE
YEAR ENDED JUNE 30, 2019
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: SDSF - CUST.SERV'S

<u>EXPENDITURE SUB-OBJECT</u>		<u>OPERATING</u>	<u>ADJUSTED</u>	<u>ADJUSTED</u>
<u>OBJ</u>	<u>DESCRIPTION</u>	<u>EXPENSES</u>	<u>COST</u>	<u>CURRENT</u>
			<u>FACTORS</u>	<u>ANNUAL</u>
				<u>EXPENSES</u>
9951	OPERATING TRANS OUT-SUBSIDIES	\$ 2,664,759.00	\$ 820,089.69	\$ 3,484,848.69
	TOTAL TRANSFERS/FEES	2,664,759.00	820,089.69	3,484,848.69
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 2,664,759.00</u>	<u>\$ 820,089.69</u>	<u>\$ 3,484,848.69</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, 2019
RATE STUDY- TASKS NO. 4 & 5 SUPPORT**

ORGANIZATIONAL UNIT: WASTEWATER

EXPENDITURE SUB-OBJECT		OPERATING	ADJUSTED	ADJUSTED
OBJ	DESCRIPTION	EXPENSES	COST FACTORS	CURRENT ANNUAL EXPENSES
7020	PERMANENT EMPLOYEES	\$ 3,980,115.27	\$ 134,527.90	\$ 4,114,643.17
7025	ACT.ASSIGNMENT	6,972.71	235.68	7,208.39
7040	TEMPORARY EMPLOYEES	20,191.85	682.48	20,874.33
7050	REGULAR HOURLY RATE	3,957.81	133.77	4,091.58
7055	TIME & ONE-HALF	97,611.45	3,299.27	100,910.72
7105	EMPLOYERS SOCIAL SECURITY	291,122.52	9,839.94	300,962.46
7110	HOSPITALIZATION INSURANCE	987,456.20	117,902.27	1,105,358.47
7115	RETIREE HEALTH CARE	464,606.57	(129,207.09)	335,399.48
7120	RETIREMENT FUND CONTRIBUTION	854,331.61	35,711.06	890,042.67
7135	UNEMPLOYMENT COMPENSATION	5,976.62	-	5,976.62
7165	SHIFT DIFFERENTIAL	10,393.48	-	10,393.48
	TOTAL PERSONAL SERVICES	<u>6,722,736.09</u>	<u>173,125.28</u>	<u>6,895,861.37</u>
7520	SUPPLIES	1,111,439.86	-	1,111,439.86
7530	PROCESS CHEMICALS	532,751.57	-	532,751.57
7670	CLOTHING/CLEANING ALLOWANCE	6,422.75	-	6,422.75
7800	INVENTORY - COST OF GOODS SOLD	131,157.32	-	131,157.32
8510	POSTAGE	4,553.92	-	4,553.92
	TOTAL SUPPLIES	<u>1,786,325.42</u>	<u>-</u>	<u>1,786,325.42</u>
7910	PUBLICATIONS AND SUBSCRIPTIONS	1,115.83	-	1,115.83
8010	CONTRACTUAL SERVICES	6,522,582.43	(785,312.75)	5,737,269.68
8011	CONTRACT EMPLOYEES - TEMP SERVICES	291,396.40	-	291,396.40
8240	FEES	20,180.00	-	20,180.00
8500	TELEPHONE	74,571.98	-	74,571.98
9000	PRINTING & PUBLISHING	2,777.00	-	2,777.00
9010	ADVERTISING - ANY MEDIA	2,868.32	-	2,868.32
9100	PROFESSIONAL DEVELOPMENT	2,714.75	-	2,714.75
9110	OTHER TRAVEL & TRAINING	95,532.20	-	95,532.20
9130	LOCAL BUSINESS EXPENSE	2,940.49	-	2,940.49
9150	MEMBERSHIPS	19,980.00	-	19,980.00
9180	WATER	97,350.65	-	97,350.65
9200	ELECTRICITY	2,091,973.96	(58,174.00)	2,033,799.96
9210	NATURAL GAS	171,657.77	-	171,657.77
9340	MAINTENANCE SERVICE	75,315.55	-	75,315.55
9410	EQUIPMENT RENTALS OR LEASE	49,396.45	-	49,396.45
9440	FLEET MANAGEMENT EQUIPMENT	227,997.24	-	227,997.24
9450	311 CALL CENTER SERVICES	5,595.00	-	5,595.00
9470	VEHICLE USAGE/CAR MILAGE	4,787.15	-	4,787.15
9480	COMPUTER SERVICES	319,116.70	(31,391.70)	287,725.00
9550	MISCELLANEOUS	13,125.00	-	13,125.00
	TOTAL OTHER SERVICES & CHARGES	<u>10,092,974.87</u>	<u>(874,878.45)</u>	<u>9,218,096.42</u>
9750	BUILDING	2,523.00	-	2,523.00
9760	EQUIPMENT	143,992.30	-	143,992.30
9800	FURNITURE	10,772.61	-	10,772.61
9840	SOFTWARE	15,419.90	-	15,419.90
	TOTAL CAPITAL	<u>172,707.81</u>	<u>-</u>	<u>172,707.81</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 18,774,744.19</u>	<u>\$ (701,753.17)</u>	<u>\$ 18,072,991.02</u>

**CITY OF GRAND RAPIDS, MICHIGAN
SEWAGE DISPOSAL SYSTEM FUND
ADJUSTED ACTUAL EXPENSE
YEAR ENDED JUNE 30, 2019
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	\$ 317,213.20	\$ 10,721.81	\$ 327,935.01
7025	ACT.ASSIGNMENT	692.08	23.39	715.47
7055	TIME & ONE-HALF	986.03	33.33	1,019.36
7105	EMPLOYERS SOCIAL SECURITY	23,028.37	778.36	23,806.73
7110	HOSPITALIZATION INSURANCE	74,302.91	8,871.77	83,174.68
7115	RETIREE HEALTH CARE	39,556.19	(11,000.58)	28,555.61
7120	RETIREMENT FUND CONTRIBUTION	72,736.92	3,040.40	75,777.32
7135	UNEMPLOYMENT COMPENSATION	443.92	-	443.92
	TOTAL PERSONAL SERVICES	<u>528,959.62</u>	<u>12,468.48</u>	<u>541,428.10</u>
7520	SUPPLIES	8,537.85	-	8,537.85
7670	CLOTHING/CLEANING ALLOWANCE	277.55	-	277.55
	TOTAL SUPPLIES	<u>8,815.40</u>	<u>-</u>	<u>8,815.40</u>
8010	CONTRACTUAL SERVICES	147,595.67	-	147,595.67
8011	CONTRACT EMPLOYEES - TEMP SERVICES	79.32	-	79.32
8500	TELEPHONE	(183.85)	-	(183.85)
9100	PROFESSIONAL DEVELOPMENT	36.07	-	36.07
9110	OTHER TRAVEL & TRAINING	11,409.46	-	11,409.46
9130	LOCAL BUSINESS EXPENSE	104.41	-	104.41
9150	MEMBERSHIPS	670.00	-	670.00
	TOTAL OTHER SERVICES & CHARGES	<u>159,711.08</u>	<u>-</u>	<u>159,711.08</u>
9760	EQUIPMENT	11,855.72	-	11,855.72
	TOTAL CAPITAL	<u>11,855.72</u>	<u>-</u>	<u>11,855.72</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 709,341.82</u>	<u>\$ 12,468.48</u>	<u>\$ 721,810.30</u>

**CITY OF GRAND RAPIDS, MICHIGAN
SEWAGE DISPOSAL SYSTEM FUND
ADJUSTED ACTUAL EXPENSE
YEAR ENDED JUNE 30, 2019
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	\$ 1,575,871.16	\$ 53,264.45	\$ 1,629,135.61
7025	ACT.ASSIGNMENT	4,284.57	144.82	4,429.39
7040	TEMPORARY EMPLOYEES	877.92	29.67	907.59
7055	TIME & ONE-HALF	140,647.58	4,753.89	145,401.47
7105	EMPLOYERS SOCIAL SECURITY	123,555.87	4,176.19	127,732.06
7110	HOSPITALIZATION INSURANCE	402,381.45	48,044.35	450,425.80
7115	RETIREE HEALTH CARE	193,930.38	(53,932.04)	139,998.34
7120	RETIREMENT FUND CONTRIBUTION	356,605.82	14,906.12	371,511.94
7135	UNEMPLOYMENT COMPENSATION	2,211.39	-	2,211.39
7165	SHIFT DIFFERENTIAL	233.23	-	233.23
	TOTAL PERSONAL SERVICES	<u>2,800,599.37</u>	<u>71,387.45</u>	<u>2,871,986.82</u>
7520	SUPPLIES	306,837.83	-	306,837.83
7670	CLOTHING/CLEANING ALLOWANCE	9,615.93	-	9,615.93
	TOTAL SUPPLIES	<u>316,453.76</u>	<u>-</u>	<u>316,453.76</u>
8010	CONTRACTUAL SERVICES	820,876.27	-	820,876.27
8011	CONTRACT EMPLOYEES - TEMP SERVICES	42,085.13	-	42,085.13
8015	CONTRACT SERV-TRAINING	3,000.00	-	3,000.00
8040	HOME REPAIRS	88,457.00	-	88,457.00
8500	TELEPHONE	34,910.85	-	34,910.85
9100	PROFESSIONAL DEVELOPMENT	6,095.00	-	6,095.00
9110	OTHER TRAVEL & TRAINING	3,119.70	-	3,119.70
9180	WATER	5,471.52	-	5,471.52
9200	ELECTRICITY	7,425.25	-	7,425.25
9210	NATURAL GAS	4,329.78	-	4,329.78
9340	MAINTENANCE SERVICE	1,250.19	-	1,250.19
9400	LAND RENTAL OR LEASE	5,832.08	-	5,832.08
9410	EQUIPMENT RENTALS OR LEASE	71,735.16	-	71,735.16
9440	FLEET MANAGEMENT EQUIPMENT	898,479.23	-	898,479.23
9450	311 CALL CENTER SERVICES	8,758.00	-	8,758.00
9470	VEHICLE USAGE/CAR MILAGE	2,388.00	-	2,388.00
9480	COMPUTER SERVICES	100,382.03	17,308.97	117,691.00
	TOTAL OTHER SERVICES & CHARGES	<u>2,104,595.19</u>	<u>17,308.97</u>	<u>2,033,447.16</u>
9760	EQUIPMENT	25,201.62	-	25,201.62
9800	FURNITURE	19.59	-	19.59
	TOTAL CAPITAL	<u>25,221.21</u>	<u>-</u>	<u>25,221.21</u>
	ORGANIZATIONAL UNIT TOTAL	<u>\$ 5,246,869.53</u>	<u>\$ 88,696.42</u>	<u>\$ 5,247,108.95</u>

**CITY OF GRAND RAPIDS, MICHIGAN
SEWAGE DISPOSAL SYSTEM FUND
ADJUSTED ACTUAL EXPENSE
YEAR ENDED JUNE 30, 2019
RATE STUDY- TASKS NO. 4 & 5**

ORGANIZATIONAL SUMMARY

EXPENDITURE SUB-OBJECT		OPERATING	ADJUSTED	ADJUSTED
NO.	DESCRIPTION	EXPENSES	COST FACTORS	CURRENT ANNUAL CURRENT
7020	PERMANENT EMPLOYEES	\$ 6,189,224.38	\$ 209,195.80	\$ 6,398,420.18
7025	ACT.ASSIGNMENT	11,949.36	403.89	12,353.25
7040	TEMPORARY EMPLOYEES	21,069.77	712.15	21,781.92
7050	REGULAR HOURLY RATE	3,957.81	133.77	4,091.58
7055	TIME & ONE-HALF	239,245.06	8,086.49	247,331.55
7105	EMPLOYERS SOCIAL SECURITY	459,565.29	15,533.31	475,098.60
7110	HOSPITALIZATION INSURANCE	1,522,805.91	181,823.03	1,704,628.94
7115	RETIREE HEALTH CARE	736,497.67	(204,820.01)	531,677.66
7120	RETIREMENT FUND CONTRIBUTION	1,355,439.31	56,657.36	1,412,096.67
7135	UNEMPLOYMENT COMPENSATION	9,062.58	-	9,062.58
7165	SHIFT DIFFERENTIAL	10,626.71	-	10,626.71
	TOTAL PERSONAL SERVICES	<u>10,559,443.85</u>	<u>267,725.79</u>	<u>10,827,169.64</u>
7520	SUPPLIES	1,428,651.84	-	1,428,651.84
7530	PROCESS CHEMICALS	532,751.57	-	532,751.57
7670	CLOTHING/CLEANING ALLOWANCE	16,316.23	-	16,316.23
7800	INVENTORY - COST OF GOODS SOLD	131,157.32	-	131,157.32
8510	POSTAGE	4,553.92	-	4,553.92
	TOTAL SUPPLIES	<u>2,113,430.88</u>	<u>-</u>	<u>2,113,430.88</u>
7175	FOOD/CLEAN/CAR ALLOW	2,802.00	-	2,802.00
7910	SUBSCRIPTIONS AND PUBLICATIONS	1,115.83	-	1,115.83
8010	CONTRACTUAL SERVICES	7,606,477.80	(785,312.75)	6,821,165.05
8011	CONTRACT EMPLOYEES - TEMP SERVICES	348,972.13	-	348,972.13
8015	CONTRACT SERV-TRAINING	3,000.00	-	3,000.00
8030	ADMINISTRATIVE SERVICES	81,895.37	(81,895.37)	-
8040	HOME REPAIRS	88,457.00	-	-
8240	FEES	20,222.25	-	20,222.25
8400	INSURANCE PREMIUMS	181,033.00	48,378.00	229,411.00
8450	GENERAL LIABILITY INSURANCE/CLAIMS	380,915.00	9,672.00	390,587.00
8500	TELEPHONE	110,560.21	-	110,560.21
9000	PRINTING & PUBLISHING	3,090.56	-	3,090.56
9010	ADVERTISING - ANY MEDIA	7,618.32	-	7,618.32
9100	PROFESSIONAL DEVELOPMENT	9,193.80	-	9,193.80
9110	OTHER TRAVEL & TRAINING	113,628.20	-	113,628.20
9130	LOCAL BUSINESS EXPENSE	3,634.90	-	3,634.90
9150	MEMBERSHIPS	58,432.00	-	58,432.00
9180	WATER	102,822.17	-	102,822.17
9200	ELECTRICITY	2,099,399.21	(58,174.00)	2,041,225.21
9210	NATURAL GAS	175,987.55	-	175,987.55
9340	MAINTENANCE SERVICE	76,565.74	-	76,565.74
9400	LAND RENTAL OR LEASE	5,832.08	-	5,832.08
9410	EQUIPMENT RENTALS OR LEASE	122,434.03	-	122,434.03
9430	BUILDINGS RENTALS OR LEASE	28,458.00	-	28,458.00
9440	FLEET MANAGEMENT EQUIPMENT	1,126,476.47	-	1,126,476.47
9450	311 CALL CENTER SERVICES	15,285.00	-	15,285.00
9460	ENGINEERING SERVICES	6,745.00	-	6,745.00
9470	VEHICLE USAGE/CAR MILAGE	13,329.78	-	13,329.78
9480	COMPUTER SERVICES	434,268.69	(11,535.69)	422,733.00
9550	MISCELLANEOUS	13,125.00	-	13,125.00
	TOTAL OTHER SERVICES & CHARGES	<u>13,241,777.09</u>	<u>(878,867.81)</u>	<u>12,274,452.28</u>
9750	BUILDING	2,523.00	-	2,523.00
9760	EQUIPMENT	184,639.30	-	184,639.30
9800	FURNITURE	10,792.20	-	10,792.20
9840	SOFTWARE	15,419.90	-	15,419.90
9880	CONSTRUCTION IN PROGRESS	819,650.65	-	819,650.65
	TOTAL CAPITAL	<u>1,033,025.05</u>	<u>-</u>	<u>1,033,025.05</u>
9510	A-87 COST ALLOCATION	719,457.00	(44,501.00)	674,956.00
9951	OPERATING TRANS OUT-SUBSIDIES	2,664,759.00	820,089.69	3,484,848.69
	TOTAL TRANSFERS/FEES	<u>3,384,216.00</u>	<u>775,588.69</u>	<u>4,159,804.69</u>
	GRAND TOTAL- EXPENDITURES	<u>\$ 30,331,892.87</u>	<u>\$ 164,446.67</u>	<u>\$ 30,407,882.54</u>

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: September 10, 2019

TO: Molly J. Clarin
Fiscal Services Manager

FROM: Jenessa B. Carter
Financial Analyst

**SUBJECT: 2019 SEWER RATE STUDY TASK #4
FY19 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

JBC:jbc

**CITY OF GRAND RAPIDS, MICHIGAN
SEWAGE PUMPING STATIONS OPERATING COSTS
FOR THE YEAR ENDED JUNE 30, 2019**

<u>Station</u>	<u>Physical Location</u>	<u>Type</u>	<u>FY2019 5900 Expenses</u>
Market Avenue Pump Station	Grand Rapids	Interceptor	\$253,751.57
Millbank Lift Station	Grand Rapids	Local	\$3,894.53
Eastlake Lift Station	Grand Rapids	Local	\$7,294.46
Eastern Lift Station	Grand Rapids	Trunk	\$5,363.50
Oak Hollow Lift Station	Grand Rapids Twosp	Local	\$10,389.88
Kingsbury Lift Station	Walker	Trunk	\$16,698.99
Bona Vista Lift Station	Grand Rapids	Trunk	\$33,689.85
Aberdeen Lift Station	Grand Rapids	Local	\$24,285.24
O'Brien Lift Station	Walker	Trunk	\$37,594.77
Leonard Heights Lift Station	Walker	Trunk	\$15,283.82
Guild Lift Station	Grand Rapids	Local	\$9,338.46
Orchard Vista Lift Station	Cascade Twosp	Local	\$4,960.50
Brookview Lift Station	Grand Rapids	Trunk	\$19,300.36
Remembrance Road Lift Station	Walker	Local	\$57,285.49
Kraft Avenue Lift Station	Cascade Twosp	Local	\$8,498.24
Thornapple Lift Station	Cascade Twosp	Trunk	\$26,705.00
Thornhills Lift Station	Cascade Twosp	Local	\$9,498.05
Greenbrier Lift Station	Grand Rapids Twosp	Local	\$7,152.36
Shore Haven Lift Station	Grand Rapids Twosp	Local	\$8,302.53
Ada Lift Station	Ada	Local	\$32,883.66
Robinhood Lift Station	Grand Rapids Twosp	Local	\$16,938.05
Lincoln School Lift Station	Grand Rapids Twosp	Local	\$7,594.55
Reeds Lake Blvd. Lift Station	Grand Rapids Twosp	Local	\$9,299.47
6000 28th Street Lift Station	Cascade Twosp	Local	\$7,328.38
East Grand Rapids Meter Station	East Grand Rapids	Meter	\$1,440.07
Rickman Avenue Lift Station	Grand Rapids	Local	\$6,168.73
Michigan Street Lift Station	Grand Rapids	Local	\$7,472.41
Eagle Crest Lift Station	Grand Rapids Twosp	Local	\$10,669.23
East Paris Lift Station	Grand Rapids Twosp	Local	\$24,193.68
Alpine Estates Lift Station	Walker	Local	\$9,835.98
Elmdale Lift Station	Grand Rapids	Local	\$5,816.91
Collindale Lift Station	Walker	Local	\$5,089.76
Bird Avenue Lift Station	Grand Rapids Twosp	Local	\$23,096.21
Valentine Lift Station	Grand Rapids Twosp	Local	\$3,939.77
Cascade Springs Lift Station	Cascade Twosp	Local	\$8,666.40
Churchill Downs Lift Station	Grand Rapids	Local	\$5,226.16
Woodsboro Court Lift Station	Grand Rapids Twosp	Local	\$4,963.33
Meadowood Trails Lift Station	Cascade Twosp	Local	\$7,863.74
Gaines Township Meter Station	Gaines Township	Meter	\$930.84
Kentwood Meter Station	Kentwood	Meter	\$3,019.64
Stonebridge Lift Station	Grand Rapids Twosp	Local	\$14,920.84
Burton/Cacade Lift Station	Cascade Twosp	Local	\$40,103.58
Crahen Lift Station	Grand Rapids Twosp	Local	\$22,781.34
Jonathan Woods Lift Station	Cascade Twosp	Local	\$5,073.26
Watermark Lift Station	Cascade Twosp	Local	\$6,818.04
Mountain Ash Lift Station	Tallmadge Twosp	Local	\$7,243.75
Reeds Hollow Lift Station	Grand Rapids Twosp	Local	\$6,683.52
Celebration Village Lift Station	Grand Rapids Twosp	Trunk	\$9,992.60
Saddleback Lift Station	Grand Rapids Twosp	Local	\$4,606.30
Arbor Hills Lift Station	Grand Rapids Twosp	Local	\$10,194.43
16th Avenue Lift Station	Marne	Local	\$7,575.49
Hayes West Lift Station	Wright TWP	Local	\$7,806.48
Hayes East Lift Station	Wright TWP	Local	\$3,661.65
Cypress Trails Lift Station	Grand Rapids Twosp	Local	\$9,975.98
8th & Leonard Lift Station	Tallmadge Twosp	Local	\$6,638.42
Summit Ridge Lift Station	Grand Rapids	Local	\$5,582.26
Lake Michigan Estates	Tallmadge Twosp	Local	\$6,595.62

\$937,978.13

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 1, 2019

TO: Molly Clarin
Fiscal Services Manager

FROM: Jeff Dood
Chief Financial Officer

**SUBJECT: 2019 SEWER RATE STUDY TASK #5
KNOWN COST ADJUSTMENTS**

Known cost adjustments by which to adjust FY19 operating costs are listed below.

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

Labor negotiations recently concluded and GREIU and APA wages were increased by 3.00% and 2.75% in FY2020 and FY2021, respectively. After converting these increases from a 2019 fiscal year to a 2020 calendar year basis as well as factoring in lump sum payments (FY2019 only), the result is a 3.38% 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 (77% GREIU and 23% APA). Executive and non-reps amounted to only 2.3% of the population and were therefore excluded. **The wage increase factor to translate FY2019 actual costs to estimated calendar 2020 will be 3.38% [3.38 X 77% + 3.38 X 23%].**

Expense Object – 9480/8450/9510

Adjust FY2019 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 (cost allocation). The “Exhibit” workbook (inclusive of cost center allocations) maintained by the Budget Office has been utilized to blend FY2020 and FY2021 budget amounts thus arriving at an estimated 2020 calendar year rate as follows:

9480-Data Charges			
Dept.-Unit-Fund	FY2020 Request	FY2021 Forecast	Calendar 2020 Estimate
527-1000-5900	\$17,113	\$17,521	\$17,317
527-3000-5900	\$284,335	\$291,114	\$287,725
527-4010-5900	\$116,305	\$119,077	\$117,691
Total	\$417,753	\$427,712	\$422,733

8450-General Liability Insurance			
Cost Center	FY2020 Request	FY2021 Forecast	Calendar 2020 Estimate
527-1000-5900	\$384,815	\$396,359	\$390,587

9510-Contributions to Other Funds (Cost Allocation)			
Cost Center	FY2020 Request	FY2021 Forecast	Calendar 2020 Estimate
527-1000-5900	\$674,893	\$675,018	\$674,956

Expense Object - 7105

Increase FY2019 actual FICA expense by 3.38% consistent with the known wage impacts detailed above.

Expense Object - 7110

The calendar 2020 Trend Report is not completed at this time. However, unfavorable health insurance cost trends were anticipated in the calendar 2019 Trend Report. Additionally, the three-year smoothing is less favorable for calendar 2020 rates than it was for calendar 2019 rates (and slightly more favorable for calendar 2021 rates) but has nonetheless helped to limit the projected increase in health insurance to 11.94%. **Increase FY2019 health insurance actual by 11.94% to reflect these anticipated rate changes.**

The projected FY20 (\$15,396) and FY21 (\$16,847) health insurance rates were blended into a 2020 calendar year rate and divided by the FY2019 base amount (\$14,402) to arrive at the increase factor [(((((\$15,396 + \$16,847) / 2)) / \$14,402) - 1) * 100].

Expense Object - 7115

Retiree health care (“RHC”) rates are projected to trend considerably down in FY2020 (to 8.55%) and FY2021 (to 8.69%) from a base year rate of 12.47% in FY2019. This decrease is slightly offset by the projected wage adjustments discussed above (lump sum payments, if any, are not subject to RHC). The Sewer Fund did not have an OPEB adjustment in FY2019 due to changes resulting from the prior implementation of GASB Statement No. 75.

The RHC factor after consideration of the above rate and wage adjustments is 72.19% (or a decrease of 27.81%) for both GREIU and APA members. These factors are then weighted in accordance with union membership within the Sewer Fund [(-27.81 * 77%) + (-27.81 * 23%)].

The factor to establish calendar year 2020's retiree health care cost is -27.81%.
Decrease the total of fiscal year 2019's retiree health care by this percent to establish the cost for calendar year 2020.

Expense Object - 7120

The pension expense factor to translate FY2019 actual costs to estimated calendar 2020 will be 4.18%. **Increase the total of fiscal year 2019's pension expense by this percent to establish the cost for calendar year 2020.** This reflects the effect of a General Pension rate change decrease from FY19 of 22.93% to a calendar 2020 rate of 22.88% and the projected wage adjustments discussed above (lump sum payments, if any, are not pensionable). The calendar 2020 rate is a blend of the FY2020 rate (22.63%) and the FY2021 rate (23.12%).

The pension factor after consideration of the above rate and wage adjustments is 104.18% (or an increase of 4.18%) for GREIU and APA members. These factors are then weighted in accordance with union membership within the Sewer Fund $[(4.18 * 77\%) + (4.18 * 23\%)]$.

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 8, 2019

TO: Molly J. Clarin
Fiscal Services Manager

FROM: Charles R. Schroeder, PE
Acting Utilities Director

**SUBJECT: 2019 SEWER RATE STUDY TASK #5
KNOWN COST ADJUSTMENTS**

Known cost adjustments by which to adjust FY19 operating costs are listed below:

<u>ACCOUNT/User Code</u>	<u>DESCRIPTION</u>	<u>AMOUNT</u>
5900-527-1000-8030	Kent County Community Action Program (ICB)	(\$81,895.37)
5900-527-1000-8400	Insurance Premiums	\$48,378.00
5900-527-3000-8010	GVRBA Contractual Services	(\$785,312.75)
5900-527-3000-9200	Consumers Energy Green Generation Participation	(\$58,174.00)

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: September 5, 2019

TO: Molly J. Clarin
Fiscal Services Manager

FROM: Jenessa B. Carter
Financial Analyst

SUBJECT: 2019 SEWER RATE STUDY TASK #6

The Sewage Disposal System Fund's revenues by governmental unit for the year ended June 30, 2019, are disclosed on the attached page, along with the three-year average billed volume used to calculate expected revenue in the next calendar year (see Task 26 and 27). In addition, annual volume comparisons for the past five (5) years by governmental unit are included herein.

Attachments

JBC:jbc

**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, 2019:

RETAIL:	<u>SALES REVENUE</u>	<u>3 YR AVE BILLED VOL (GALLONS)</u>	<u>3 YR AVE BILLED VOL (HCF)</u>
CITY OF GRAND RAPIDS (1)	\$ 36,983,971.19	4,957,436,572	6,627,589
CITY OF WALKER	4,559,278.18	644,923,356	862,197
CITY OF KENTWOOD	4,237,341.36	1,054,006,052	1,409,099
CASCADE TOWNSHIP	2,422,686.31	356,420,504	476,498
GRAND RAPIDS TOWNSHIP	2,438,348.72	289,048,892	386,429
TALLMADGE TOWNSHIP	469,450.33	24,360,116	32,567
WRIGHT TOWNSHIP (2)	271,276.85	19,394,672	25,929
SUB-TOTAL RETAIL (3)	<u>\$ 51,382,352.94</u>	<u>7,345,590,164</u>	<u>9,820,308</u>
 WHOLESALE:			
CITY OF E. GRAND RAPIDS	\$ 878,056.48	432,019,000	577,566
CALEDONIA TOWNSHIP	139,409.85	30,029,000	40,146
ADA TOWNSHIP	1,228,254.90	301,085,000	402,520
GAINES TOWNSHIP (4)	203,648.33	115,345,000	154,205
SUB-TOTAL WHOLESALE	<u>\$ 2,449,369.56</u>	<u>878,478,000</u>	<u>1,174,436</u>
TOTAL	<u>\$ 53,831,722.50</u>	<u>8,224,068,164</u>	<u>10,994,744</u>

REVENUE CLASSIFICATION:

527-1000-5900-6281 RETAIL SEWAGE SERVICE CHARGE	\$ 51,298,840.80
527-1000-5900-6284 WYOMING SEWAGE SERVICE CHARGE	83,512.14
527-1000-5900-6282 WHOLESALE SEWAGE SERVICE CHARGE	<u>2,449,369.56</u>
TOTAL	<u>\$ 53,831,722.50</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 2019.
- (3) A NET REVENUE ACCRUAL OF (\$9,336.80) HAS BEEN PRORATED TO ALL RETAIL CUSTOMER COMMUNITIES TO ACCRUE BILLINGS FROM THE LAST READING DATE THROUGH JUNE 30, 2019, 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
2019 RATE STUDY TASK NO. 6**

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

MUNICIPALITY	FY15		FY16		FY17		FY18		FY19		FY15-FY19	
	VOL BILLED	% CHANGE										
GRAND RAPIDS	4,815,852	1.74%	4,899,755	1.74%	4,942,953	0.88%	4,931,223	-0.24%	4,998,134	1.36%	4,998,134	3.79%
WALKER	609,313	2.19%	622,635	2.19%	650,975	4.55%	646,233	-0.73%	637,561	-1.34%	637,561	4.64%
KENTWOOD	998,322	3.64%	1,034,652	3.64%	1,032,553	-0.20%	1,069,319	3.56%	1,060,147	-0.86%	1,060,147	6.19%
CASCADE	324,180	5.94%	343,441	5.94%	358,774	4.46%	353,054	-1.59%	357,434	1.24%	357,434	10.26%
GRAND RAPIDS TWP	286,787	0.91%	289,396	0.91%	289,525	0.04%	284,378	-1.78%	293,245	3.12%	293,245	2.25%
TALLMADGE	15,860	12.79%	17,888	12.79%	21,454	19.94%	24,350	13.50%	27,276	12.02%	27,276	71.98%
WRIGHT TWP	15,661	17.14%	18,345	17.14%	19,465	6.11%	18,885	-2.98%	19,834	5.03%	19,834	26.65%
EAST GRAND RAPIDS	322,576	9.37%	352,815	9.37%	393,511	11.53%	441,259	12.13%	461,287	4.54%	461,287	43.00%
ADA TWP	314,628	1.77%	320,210	1.77%	315,417	-1.50%	296,101	-6.12%	291,737	-1.47%	291,737	-7.28%
CALEDONIA TWP	26,242	-4.15%	25,154	-4.15%	31,631	25.75%	29,741	-5.98%	28,715	-3.45%	28,715	N/A
GAINES TWP	111,500	6.43%	118,674	6.43%	133,866	12.80%	113,527	-15.19%	115,345	1.60%	115,345	3.45%
TOTAL	7,840,921	2.58%	8,042,965	2.58%	8,190,124	1.83%	8,208,070	0.22%	8,290,715	1.01%	8,290,715	5.74%

GRAND RAPIDS VOLUME COMPARED TO
CUSTOMER COMMUNITIES

VOLUME = 1,000 GALLONS	FY15		FY16		FY17		FY18		FY19	
	VOL BILLED	% OF TOTAL								
GRAND RAPIDS	4,815,852	60.92%	4,899,755	60.92%	4,942,953	60.35%	4,931,223	60.08%	4,998,134	60.29%
CUSTOMER COMMUNITIES	3,025,069	39.08%	3,143,210	39.08%	3,247,171	39.65%	3,276,847	39.92%	3,292,581	39.71%
TOTAL	7,840,921	100.00%	8,042,965	100.00%	8,190,124	100.00%	8,208,070	100.00%	8,290,715	100.00%

* 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	\$ 3,328.97
6140	INSPECTION FEES - UTILITIES	25,245.00
6723	INTEREST/PENALTIES ON SPEC ASSM	1,169.96

527-(3000/3080)-5900

4912	INDUSTRIAL PRETREATMENT PERMITS	\$ 44,692.91
6423	SALES OF SCRAP MATERIAL	1,317.23
6461	INVENTORY WITHDRAWALS (SALES)	23,168.89
		<u>\$ 98,922.96</u>

CREDIT: UNDERUTILIZATION OF PENALTY CREDIT FROM PREVIOUS YEAR	<u>\$ 243,504.00</u>
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INTEGRATED SYSTEM CREDITS

527-1000/3000-5900

6152	INTEGRATED SEWER CONNECTION	\$ 256,680.45
6283	SEWAGE SURCHARGE	2,373,604.09
		<u>\$ 2,630,284.54</u>

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 30, 2019

TO: Molly J. Clarin
Fiscal Services Manager

FROM: Charles R. Schroeder, PE
Acting Utilities Director

SUBJECT: 2019 SEWER RATE STUDY- TASK #8

There are no significant changes in operating levels are anticipated to take effect by January 1, 2020, which would require adjustments to operating costs for the test period.

While the Biodigestion system projects do not affect the 2019 Rate Study and 2020 rates because the project components are not yet in operation, the Rate Study methodology does allow for adjustment to the revenue requirement to mitigate predicted rate impacts on rate payers. During the October 17, 2019, Utility Advisory Board Meeting, it was determined that preloading return on investment and depreciation expenses related to the biodigester projects which would contribute to increasing 2020 rates would help to temper the expected 2021 rate increase. Placing \$30 Million worth of assets into the rate base was selected as appropriate for mitigating the 2021 rate impact.

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 16, 2019

TO: Molly J. Clarin
Fiscal Services Manager

FROM: Charles R. Schroeder, PE
Acting Utilities Director

SUBJECT: 2019 SEWER RATE STUDY- TASK #9

No significant changes in sewer revenues are anticipated to take effect by January 1, 2020, which would require an adjustment to operating revenue estimates as a whole.

CS

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: November 21, 2019

TO: Molly J. Clarin
Fiscal Services Manager

FROM: Charles R. Schroeder, PE
Acting Utilities Director

SUBJECT: 2019 SEWER RATE STUDY- TASK #10

The following are sewage system projects that should be considered operative as of January 1, 2020.

<u>Description</u>	<u>Location</u>	<u>Proj. Code</u>	<u>Cost</u>
WRRF Maintenance Shop Expansion	Integrated	590118072 590217046	\$3,313,148
Worden St – Madison to Eastern	Grand Rapids	590119115	650,000
Hastings Ave – Fairview to Prospect	Grand Rapids	590117152	640,000
CIPP Lining	Grand Rapids	590115190	260,215
CIPP Lining	Grand Rapids	590215225	218,857
Somerset Drive & Somerset Hill Ct	Grand Rapids	Contribution	179,040
GRCC ATC Expansion	Grand Rapids	Contribution	85,000
CIPP Lining	GR Township	590215225	92,403
National Tire Wholesale	Cascade	Contribution	109,030
Lanterns Condominiums	Cascade	Contribution	81,211
Cobblestone at Ravines Ph 2	Kentwood	Contribution	225,629
Pfeiffer Pines Site Condominium	Kentwood	Contribution	166,257
Bretonfield Preserve Ph 2	Kentwood	Contribution	162,429
Woodland Mall Expansion	Kentwood	Contribution	113,331
Blairview Parkway at Ravines	Kentwood	Contribution	87,404
Meadow Verde Ph 3	Tallmadge	Contribution	142,080
Valley Site Farms	Walker	Contribution	164,469
Westtown Ph 1	Walker	Contribution	169,790
Cambridge Grove Ph 2	Walker	Contribution	131,860
Four Mile Apartments	Walker	Contribution	47,200
Bezt Industries	Walker	Contribution	43,550
Westtown Ph 2	Walker	Contribution	39,600
			<u>\$7,122,503</u>

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

COMPUTE ACCUMULATED COST, DEPRECIATION AND DEPRECIATION EXPENSE AS OF JUNE 30, 2019

INTEGRATED SYSTEM

	ORIGINAL COST	ACCUMULATED DEPRECIATION	DEPRECIATION EXPENSE
LAND & EASEMENTS	\$ 1,678,732	\$ -	\$ -
LAND IMPROVEMENTS	16,315,449	14,334,616	237,947
BUILDINGS & STRUCTURES	51,829,609	34,357,689	1,095,868
PROCESS EQUIPMENT	72,276,832	41,204,253	1,826,750
AUXILIARY EQUIPMENT	28,781,324	26,217,292	450,011
MACHINERY & EQUIPMENT	6,510,308	5,235,630	201,283
OFFICE EQUIPMENT & FURNITURE	494,401	486,782	234
	<u>\$ 177,886,655</u>	<u>\$ 121,836,262</u>	<u>\$ 3,812,093</u>

NON-INTEGRATED SYSTEM

	ORIGINAL COST	ACCUMULATED DEPRECIATION	DEPRECIATION EXPENSE
LAND & EASEMENTS	\$ 3,735,120	\$ -	\$ -
LAND IMPROVEMENTS	3,486,637	2,043,369	174,377
BUILDINGS & STRUCTURES	10,948,179	4,110,325	257,054
PROCESS EQUIPMENT	16,842,826	8,691,891	524,387
AUXILIARY EQUIPMENT	3,898,571	3,488,982	140,992
MACHINERY & EQUIPMENT	1,645,774	1,639,429	12,907
OFFICE EQUIPMENT & FURNITURE	66,272	66,272	(2,360)
SERVICEMAINS - GRAND RAPIDS	392,444,119	131,276,340	7,435,920
SERVICEMAINS - WALKER	40,764,471	18,393,550	778,867
SERVICEMAINS - KENTWOOD	42,556,694	18,108,871	814,305
SERVICEMAINS - CASCADE TWP	22,157,311	9,738,895	435,161
SERVICEMAINS - GRAND RAPIDS TWP	19,369,546	8,413,444	380,083
SERVICEMAINS - TALLMADGE TWP	6,267,917	1,824,984	118,262
SERVICEMAINS - WRIGHT TWP	125,288	33,827	2,505
	<u>\$ 564,308,725</u>	<u>\$ 207,830,179</u>	<u>\$ 11,072,460</u>
TOTAL	<u>\$ 742,195,380</u>	<u>\$ 329,666,441</u>	<u>\$ 14,884,553</u>

SOURCE: GENERAL LEDGER, AS ADJUSTED, FOR JUNE 30, 2019.

**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, 2019: \$ 835,578

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 = \$ 30,407,883 @ 90/365 = \$ 7,497,834

TOTAL WORKING CAPITAL NEEDS CONSIST OF THE FOLLOWING:

12A INVESTMENT IN INVENTORY	\$ 835,578
12B PREPAYMENT OF OPERATING EXPENSES	-
12C 90 DAY OPERATING EXPENSES	7,497,834
	\$ 8,333,412
	\$ 8,333,412

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: September 5, 2019

TO: Molly J. Clarin
Fiscal Services Manager

FROM: Charles R. Schroeder, PE
Acting Utilities Director

**SUBJECT: 2019 SEWER RATE STUDY TASK #13
ZONEGATING & JOINT USE ALLOCATION METHODS**

Lengths and costs of all zoned gated 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	16,514.10
LESS: WHOLESALE BILLED FLOW	(897.10)
LESS: RETAIL BILLED FLOW	<u>(7,393.63)</u>
TOTAL RETAIL I/I & OTHER FLOW	<u>8,223.37</u>
2.) RETAIL INFLOW FROM SEPARATED AREAS (A)	589.05
RETAIL INFLOW FROM COMBINED AREAS - AMOUNT ESTIMATED (A)	785.01
LESS: ANNUAL BYPASS FROM (3) PUMPING STATIONS	-
LESS: IN-SYSTEM BYPASS & RETENTION BASIN OVERFLOW	-
TOTAL RETAIL INFLOW	<u>1,374.06</u>
3.) RETAIL INFILTRATION:	
TOTAL RETAIL I/I & OTHER FLOW	8,223.37
LESS: TOTAL RETAIL INFLOW (#2)	<u>(1,374.06)</u>
LESS: MARKET AVE RETENTION BASIN (MARB) CAPTURE	6,849.31
TOTAL RETAIL INFILTRATION & OTHER FLOW	<u>(33.90)</u>
4.) ALLOCATION OF RETAIL INFILTRATION & OTHER FLOW - APPORTIONED ON THE BASIS OF B&V SUMMARY OF 2018 MONITORED FLOW DATA (B)	
	6,815.41
	<u>6,815.41</u>

	MILLION GALLONS
PRORATA SHARE OF RETAIL INFILTRATION & OTHER	6,815.41
100.0000%	<u>6,815.41</u>
100.0000%	<u>6,815.41</u>

<u>GOVERNMENTAL UNIT(S)</u>	MILLION GALLONS
UTILITY PARTNERS	6,815.41
TOTAL	<u>6,815.41</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)	8,146.66	1,374.06	6,815.41	33.31	16,369.44	99.1241%	44.8478
UTILITY PARTNERS	115.35	-	-	0.47	115.82	0.7013%	0.3173
GAINES TWP	8,290.73	1,374.06	6,815.41	33.90	16,514.10	100.0000%	45.2441
TOTAL							

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

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: August 29, 2019

TO: Molly J. Clarin, Fiscal Services Manager

FROM: Charles Schroeder, P.E.
Acting Utilities Director

SUBJECT: 2019 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 increased by 12.30% from 14,705.27 MG treated in FY2018 to 16,514.10 MG treated in FY2019. The final in system Combined Sewer Overflow point was eliminated July 13, 2015 and are no longer applicable to this report.

Month	FY 2017	FY 2018	FY 2019	% incr (decr)
July	1082.78	1116.92	1105.70	-1.00%
August	1280.12	1057.36	1205.70	14.03%
September	1118.15	900.72	1295.90	43.87%
October	1198.52	1360.70	1481.10	8.85%
November	1147.76	1275.47	1288.60	1.03%
December	1238.41	1100.71	1319.90	19.91%
January	1505.68	1284.44	1247.30	-2.89%
February	1115.35	1496.30	1411.60	-5.66%
March	1270.60	1320.38	1670.30	26.50%
April	1774.21	1276.56	1420.60	11.28%
May	1450.57	1394.57	1601.70	14.85%
June	1185.44	1121.14	1465.70	30.73%
Total	15,367.59	14,705.27	16,514.10	12.30%

Data Measured	FY 2017	FY 2018	FY 2019	% incr (decr)
Water Resource Recovery Facility (WRRF) avg daily flow (MG)	42.219	40.288	44.200	9.71%
Rainfall Recorded at WRRF (inches)	32.750	23.180	35.850	54.66%
Market Ave Retention Basin (MARB) inflow (MG)	141.940	155.850	33.900	-78.25%
Market Ave Retention Basin (MARB) outflow (MG)	38.670	62.320	0.000	-100.00%

cc: Jeff McCaul, Acting City Engineer

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MEMORANDUM

CITY OF GRAND RAPIDS

DATE: September 5, 2019

TO: Molly J. Clarin
Fiscal Services Manager

FROM: Charles R. Schroeder, PE
Acting Utilities Director

SUBJECT: 2019 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	\$ 37,122,503	
	- TASK #11/21	741,390,380	
	- TASK #16/21	<u>(187,348,706)</u>	\$ 591,164,177
LESS: ACCUMULATED DEPRECIATION	- TASK #10	\$ -	
	TASK #11/21	329,566,598	
	TASK #16/21	<u>(69,740,000)</u>	<u>(259,826,598)</u>
			331,337,579
WORKING CAPITAL REQUIREMENT	- TASK #12	\$ 8,333,412	
		<u>8,333,412</u>	<u>8,333,412</u>
			339,670,991
CONTRIBUTIONS BY OTHERS	- TASK #21	\$ 196,962,377	
LESS: AMORTIZATION		(143,084,131)	
		<u>(53,878,246)</u>	<u>(53,878,246)</u>
CONSTRUCTION COST RATE BASE			<u><u>\$ 285,792,745</u></u>

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 16, 2019

TO: Molly J. Clarin
Fiscal Services Manager

FROM: Arden Postma, P.E.
Hydraulic Engineer

SUBJECT: 2019 Sewer Rate Study Integrated Connection Fees Task #15A

Attached is the Integrated Water and Sewer Connection Fee Schedule of rates effective January 1, 2020. 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, 2020, shall be as follows:

Residential Users (three residential units or less)

Plan Review and Connection Fee (PRC Fee)			
Meter Size	2019	2020	% Change
3/4 inch	\$350	\$360	2.85%
1 inch	\$360	\$370	2.78%
1-1/2 inch	\$360	\$370	2.78%

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

Plan Review and Connection Fee (PRC Fee)			
Meter Size	2019	2020	% Change
3/4 inch	\$680	\$700	2.94%
1 inch	\$870	\$910	4.60%
1-1/2 inch	\$1,140	\$1,220	7.02%
2 inch	\$1,610	\$1,680	4.35%
3 inch	\$1,960	\$2,100	7.14%
4 inch	\$2,730	\$3,025	10.81%
6 inch	\$3,970	\$4,270	7.56%

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:

Meter Capacity Charge			
Meter Size	2019	2020	% Change
¾ inch	\$210	\$210	0%
1 inch	\$250	\$250	0%
1 ½ inch - T2	\$800	\$750	-6.25%
2 inch - T2	\$900	\$880	-2.22%
3 inch - T2	\$1,100	\$1,100	0%
4 inch - T2	At cost	At cost	0%
6 inch - T2	At cost	At cost	0%
1 ½ inch - C2	NA	\$1,200	NA
2 inch - C2	NA	\$1,385	NA
3 inch - C2	NA	\$1,755	NA
4 inch -C2	NA	At cost	NA
6 inch - C2	NA	At cost	NA

Commercial Plan Assessment Fee – For instances where there is an established connection or property has been previously reviewed to allow for connection to the System which require less System resources to verify system connection requirements.

Commercial Plan Assessment Fee			
	2019	2020	% Change
All Sizes	NA	\$125	NA

Further information on the new integrated connection fee methodology can be provided through the Utility Business Office.

AP/WJ

**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 2019 - ACCRUAL BASIS**

DATE	SRF/REVENUE REFERENCE	5073-SERIES	REVENUE BONDS				TOTAL			TOTAL PRINCIPAL & INTEREST
			PRINCIPAL	INTEREST	EST. FEES	PRINCIPAL	INTEREST	PRINCIPAL		
07/01/20	N/A	1998	(1)	\$ 136,271.11	\$ 375.00	\$ -	\$ 136,646.11	\$ 136,646.11	\$ 136,646.11	\$ 136,646.11
01/01/20	N/A	1998	(1)	\$ 2,412,861.00	136,271.11	375.00	2,412,861.00	136,646.11	2,549,507.11	2,549,507.11
07/01/20	N/A	2010A	(2)		316,600.45	800.00	0.00	317,400.45	317,400.45	317,400.45
01/01/20	N/A	2010A	(2)		316,600.45	800.00	0.00	317,400.45	317,400.45	317,400.45
07/01/20	N/A	2013	(3)		604,915.25	600.00	0.00	605,515.25	605,515.25	605,515.25
01/01/20	N/A	2013	(3)	404,175.00	604,915.25	600.00	404,175.00	605,515.25	1,009,690.25	1,009,690.25
07/01/20	N/A	2014	(4)		630,360.00	625.00	0.00	630,985.00	630,985.00	630,985.00
01/01/20	N/A	2014	(4)	489,600.00	630,360.00	625.00	489,600.00	630,985.00	1,120,585.00	1,120,585.00
07/01/20	N/A	2016	(5)		374,550.00	625.00	0.00	375,175.00	375,175.00	375,175.00
01/01/20	N/A	2016	(5)	532,950.00	374,550.00	625.00	532,950.00	375,175.00	908,125.00	908,125.00
							<u>\$3,839,586.00</u>	<u>\$4,131,443.62</u>	<u>\$7,971,029.62</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	WORDEN ST - MADISON AVE TO EASTERN AVE	\$540,000	2021
2	NORWICH AVE - OXFORD ST TO HAYDEN ST	\$27,000	2021
3	PRINCE ST - MADISON AVE TO EASTERN AVE	\$513,000	2021
4	VOIDS UNDER GELOCK - STRUCTURAL GROUT FILL	\$675,000	2021
5	GODFREY AVE - OXFORD ST TO MARKET AVE	\$2,910,000	2021
6	OXFORD ST - GODFREY TO NORWICH	\$510,000	2021
7	B ST AT UNDERHILL	\$100,000	2021
8	CHESTNUT ST - GODFREY TO 570' WEST	\$600,000	2021
9	COLLINDALE SANITARY SEWER & LIFT STATION IMP	\$250,000	2022
10	THOMAS ST - MADISON AVE TO FULLER AVE	\$243,000	2022
11	GARFIELD AVE - FULTON ST TO VETO ST, ET AL	\$100,000	2022
12	LAFAYETTE AVE - FULTON ST TO FOUNTAIN ST	\$200,000	2022
13	CASCADE/KENTWOOD SANITARY TRUNK SEWER	\$300,000	2022
14	BRANDYWINE SANITARY TRUNK SEWER	\$100,000	2022
15	GODFREY AVE - LIBERTY ST TO OXFORD ST	\$2,510,000	2022
16	GODFREY AVE - SOUTH OF RR TRACKS TO SOUTH OF OXFORD	\$3,825,000	2022
17	OTTAWA AVE - FAIRBANKS ST TO MONROE	\$200,000	2023
19	LAFAYETTE AVE - FOUNTAIN ST TO MICHIGAN ST	\$270,000	2023
20	BERKSHIRE ST - GIDDINGS TO KALAMAZOO	\$225,000	2023
21	CASCADE/KENTWOOD SANITARY TRUNK SEWER	\$300,000	2023
22	BRANDYWINE SANITARY TRUNK SEWER	\$1,250,000	2023
23	OTTAWA AVE - FAIRBANKS ST TO MONROE	\$900,000	2023
24	SHELDON BLVD - OAKES ST TO WESTON ST	\$396,000	2024
25	WHISKEY CREEK SANITARY TRUNK SEWER	\$200,000	2024
26	OLYMPIA ST TO 200' EAST	\$229,500	2024
27	KENT COUNTRY CLUB SANITARY TRUNK SEWER	\$160,000	2024
28	BURTON / BRETON SANITARY TRUNK SEWER	\$100,000	2024
29	GRANDVILLE AVE - FRANKLIN TO BEACON (DESIGN)	\$150,000	2024
30	BEACON ST AND B ST (DESIGN)	\$100,000	2024
31	GRANDVILLE AVE - FRANKLIN TO BEACON	\$1,830,000	2025
32	BEACON ST - GRANDVILLE TO CAUFIELD	\$500,000	2025
33	B ST - GRANDVILLE TO CAUFIELD ALLEY	\$305,000	2025
		<u>\$ 20,518,500</u>	

NOTE: NONE OF THE PROJECTS ABOVE ARE INCLUDED IN RECOMMENDED REVENUE REQUIREMENTS FOR CALENDAR YEAR 2020. COSTS SHOWN ARE IN 2019 DOLLARS.

SOURCE: CHUCK SCHROEDER, ASSISTANT ENVIRONMENTAL SERVICES MANAGER, OCTOBER 2019

**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
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
	<u>\$ 265,010,000</u>	<u>\$ 156,502,599</u>	<u>\$ 421,512,599</u>

**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	\$ 285,792,745
LESS: BONDED INDEBTEDNESS IN CCRB (CASH BASIS) - TASK NO. 20	(123,741,179)
NET SEWER SYSTEM EQUITY	<u><u>\$ 162,051,566</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>
27-Sep-18	4.175%	28-Mar-19	3.793%
04-Oct-18	4.235%	04-Apr-19	3.883%
11-Oct-18	4.365%	11-Apr-19	3.853%
18-Oct-18	4.345%	18-Apr-19	3.860%
25-Oct-18	4.300%	25-Apr-19	3.790%
01-Nov-18	4.333%	02-May-19	3.734%
08-Nov-18	4.363%	09-May-19	3.630%
15-Nov-18	4.303%	16-May-19	3.570%
22-Nov-18	4.260%	23-May-19	3.560%
29-Nov-18	4.220%	30-May-19	3.510%
06-Dec-18	4.125%	06-Jun-19	3.482%
13-Dec-18	4.180%	13-Jun-19	3.520%
20-Dec-18	4.110%	20-Jun-19	3.510%
27-Dec-18	4.100%	27-Jun-19	3.500%
03-Jan-19	4.085%	04-Jul-19	3.490%
10-Jan-19	4.195%	11-Jul-19	3.460%
17-Jan-19	4.190%	18-Jul-19	3.452%
24-Jan-19	4.230%	25-Jul-19	3.432%
31-Jan-19	4.220%	01-Aug-19	3.422%
07-Feb-19	4.225%	08-Aug-19	3.222%
14-Feb-19	4.235%	15-Aug-19	3.102%
21-Feb-19	4.230%	22-Aug-19	3.072%
28-Feb-19	4.185%	29-Aug-19	2.972%
07-Mar-19	4.090%	05-Sep-19	2.972%
14-Mar-19	4.040%	12-Sep-19	2.852%
21-Mar-19	3.920%	19-Sep-19	2.762%
		<u>52 WEEKS</u>	<u>3.820%</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)	\$ 162,051,566	@	4.820%	=	\$ 7,811,633
SEWER SYSTEM INDEBTEDNESS IN THE CCRB					
1998 BONDS (refunded 1990 Bonds)	4,514,391	@	5.06%	=	228,428
2008 KCDC CONTRACT	60,500	@	4.90%	=	2,965
2010 BONDS	29,625,000	@	5.00%	=	1,481,250
2010A&B BONDS	8,985,000	@	4.37%	=	392,645
2011 SRF BONDS	4,489,675	@	2.50%	=	112,242
2012 BONDS	24,535,000	@	4.48%	=	1,099,168
2013 BONDS (refunded 2004 Bonds)	7,285,325	@	4.43%	=	322,740
2013 SRF BONDS	869,125	@	2.00%	=	17,383
2014 BONDS (refunded 2005 Bonds)	12,084,800	@	4.99%	=	603,032
2016 BONDS (partially refunded 2008 Bonds)	27,393,450	@	5.00%	=	1,369,673
2018 BONDS (amt in CCRB)	3,898,913	@	5.00%	=	194,946
LESS INTEREST ON BOND RESERVE ACCOUNTS					(374,133)
	\$ 285,792,745				\$ 13,261,972
COMPOSITE RATE OF RETURN ON INVESTMENT			\$ 13,261,972	=	\$285,792,745
					4.640%

Noted Disclosure:

TOTAL BONDED INDEBTEDNESS IN CCRB (from above) \$ 123,741,179 TASK NO. 18

CITY OF GRAND RAPIDS, MICHIGAN
SEWAGE DISPOSAL SYSTEM FUND
CONSTRUCTION COST RATE BASE & RETURN ON SYSTEM INVESTMENT- TASK NO. 21- PART I
FISCAL YEAR ENDED JUNE 30, 2019

PHYSICAL LOCATION

DESCRIPTION	RETAIL										WHOLESALE					TOTAL
	INTEGRATED SYSTEM	CITY OF GR	CITY OF WALKER	CITY OF KENWOOD	CASCADE TOWNSHIP	GR TOWNSHIP	TALLMADGE TOWNSHIP	WRIGHT TOWNSHIP	CITY OF EAST GR	CALEDONIA TOWNSHIP	ADA TOWNSHIP	GAINES TOWNSHIP				
COST	\$ 211,199,803	\$ 227,721,264	\$ 41,218,485	\$ 31,805,625	\$ 21,198,627	\$ 22,090,456	\$ 5,684,880	\$ 118,230	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 561,037,370	
LESS: ACCUMULATED DEPRECIATION	121,836,262	73,326,697	18,871,815	15,037,611	9,540,108	8,890,120	1,703,802	66,577	-	-	-	-	-	-	249,272,992	
NET BOOK VALUE	\$ 89,363,541	\$ 154,394,567	\$ 22,346,670	\$ 16,768,014	\$ 11,658,519	\$ 13,200,336	\$ 3,981,078	\$ 51,653	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 311,764,378	
WORKING CAPITAL REQUIREMENT	5,405,800	1,827,434	351,420	253,419	171,835	241,336	30,834	24,334	3,333	917	19,000	3,750	-	-	8,333,412	
	\$ 94,769,341	\$ 156,222,001	\$ 22,698,090	\$ 17,021,433	\$ 11,830,354	\$ 13,441,672	\$ 4,011,912	\$ 75,987	\$ 3,333	\$ 917	\$ 19,000	\$ 3,750	\$ -	\$ -	\$ 320,097,790	
CONTRIBUTIONS	50,267,759	57,440,851	25,038,013	24,470,724	18,637,210	15,940,848	5,166,972	-	-	-	-	-	-	-	196,962,377	
LESS AMORTIZATION	(47,409,874)	(49,587,853)	(12,682,377)	(13,640,791)	(9,060,760)	(7,364,625)	(1,549,943)	-	-	-	-	-	-	-	(141,296,223)	
	\$ (2,857,885)	\$ (7,852,998)	\$ (12,355,636)	\$ (10,829,933)	\$ (9,376,450)	\$ (8,576,223)	\$ (3,617,029)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (65,666,154)	
CONSTRUCTION COST RATE BASE	\$ 91,911,456	\$ 148,369,003	\$ 10,342,454	\$ 6,191,500	\$ 2,253,904	\$ 4,865,449	\$ 394,883	\$ 75,987	\$ 3,333	\$ 917	\$ 19,000	\$ 3,750	\$ -	\$ -	\$ 264,431,636	
RETURN ON INVESTMENT- TASK 20	\$ 4,264,692	\$ 6,884,322	\$ 479,890	\$ 287,286	\$ 104,581	\$ 225,757	\$ 18,323	\$ 3,526	\$ 155	\$ 43	\$ 882	\$ 174	\$ -	\$ -	\$ 12,269,631	
	4.640%															
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	-	(481,988)	2,349,726	1,542,389	1,267,405	1,992,781	483,023	615,847	244,484	158,680	1,770,244	611,015	-	-	10,553,606	
NET BOOK VALUE	-	\$ 575,422	\$ 3,848,932	\$ 893,121	\$ 3,039,121	\$ 3,524,452	\$ 1,367,349	\$ 1,111,075	\$ 118,644	\$ 94,842	\$ 4,635,051	\$ 365,192	\$ -	\$ -	\$ 19,573,201	
WORKING CAPITAL REQUIREMENT	-	\$ 575,422	\$ 3,848,932	\$ 893,121	\$ 3,039,121	\$ 3,524,452	\$ 1,367,349	\$ 1,111,075	\$ 118,644	\$ 94,842	\$ 4,635,051	\$ 365,192	\$ -	\$ -	\$ 19,573,201	
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	-	(8)	(6,603)	(714,450)	(201,187)	(94,600)	(225)	(208)	(1,023)	(124,635)	(165,089)	(479,880)	-	-	(1,787,908)	
	-	\$ (5)	\$ -	\$ (336,212)	\$ (94,676)	\$ (43,944)	\$ -	\$ -	\$ (481)	\$ (86,121)	\$ (77,689)	\$ (331,589)	\$ -	\$ -	\$ (970,777)	
CONSTRUCTION COST RATE BASE	\$ -	\$ 575,417	\$ 3,848,932	\$ 556,909	\$ 2,944,445	\$ 3,480,508	\$ 1,367,349	\$ 1,111,075	\$ 118,163	\$ 8,721	\$ 4,557,362	\$ 33,603	\$ -	\$ -	\$ 18,602,484	
RETURN ON INVESTMENT- TASK 19/21	\$ -	\$ 47,877	\$ 320,249	\$ 46,337	\$ 244,991	\$ 289,594	\$ 113,770	\$ 92,447	\$ 9,832	\$ 726	\$ 379,194	\$ 1,559	\$ -	\$ -	\$ 1,546,576	
	8.320%	8.320%	8.320%	8.320%	8.320%	8.320%	8.320%	8.320%	8.320%	8.320%	8.320%	4.640%	\$ -	\$ -	\$ -	
RETURN ON INVESTMENT- TASK 19/21	\$ -	\$ 47,877	\$ 320,249	\$ 46,337	\$ 244,991	\$ 289,594	\$ 113,770	\$ 92,447	\$ 9,832	\$ 726	\$ 379,194	\$ 1,559	\$ -	\$ -	\$ 1,546,576	
TOTAL RETURN ON INVESTMENT	\$ 4,264,692	\$ 6,932,199	\$ 800,139	\$ 333,623	\$ 349,572	\$ 515,351	\$ 132,093	\$ 95,973	\$ 9,987	\$ 769	\$ 380,076	\$ 1,733	\$ -	\$ -	\$ 13,816,207	

CITY OF GRAND RAPIDS, MICHIGAN
SEWAGE DISPOSAL SYSTEM FUND
CONSTRUCTION COST & ACCUMULATED DEPRECIATION- TASK NO. 21- PART2
FISCAL YEAR ENDED JUNE 30, 2019

CONSTRUCTION COST

COST-CENTER BY PHYSICAL LOCATION- TASK 11 ADD. IN SERVICE- TASK 108 MARNE CONNECTOR AGREEMENT SADDLEBACK SEWER TASK 11/16/21- CSO FA AMT LIFT STATIONS / CHAMBERS: FULLER-BROOKVIEW FULTON- MIDDLEBORROW WEALTHY ST EXT. CHAMBER WEALTHY MARKET VANPORFLEIET / LEONARD HTS REMEMBRANCE / 3 MILE 16th AVENUE HAYES- WEST HAYES- EAST O'BRIEN SERVICEMAINS	AMOUNT	RETAIL					WHOLESALE					TOTAL	
		INTEGRATED SYSTEM	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
		\$ 177,886,655	\$ 425,795,195	\$ 44,153,567	\$ 42,556,694	\$ 22,855,968	\$ 22,126,092	\$ 6,624,863	\$ 196,346	\$ -	\$ -	\$ -	\$ 742,195,380
		33,313,148	2,033,713	596,469	755,049	190,241	92,403	142,080	(78,116)	-	-	-	37,122,503
			(187,348,706)		1,115,707	71,453		(515,311)					(805,000)
	\$		(719,774)				719,774						(187,348,706)
			(37,983)				37,983						
			(135,813)					15,462					
			(6,701)					46	259				
			(1,209,003)				223,259	41,229	38,117				
			387,203										
			(225,760)					33,801	191,959				
								(141,105)	141,105				
			41,613					60,829					
			(9,282,208)				2,387,491	1,273,358	1,355,482	253,522	6,405,295	976,207	
		\$ 211,199,803	\$ 227,814,698	\$ 47,417,143	\$ 34,241,135	\$ 25,505,153	\$ 27,607,689	\$ 7,535,252	\$ 1,845,152	\$ 253,522	\$ 6,405,295	\$ 976,207	\$ 591,164,177
			93,434	\$ 6,198,658	\$ 2,435,510	\$ 4,306,526	\$ 5,517,233	\$ 1,850,372	\$ 1,726,922	\$ 253,522	\$ 6,405,295	\$ 976,207	\$ 30,126,807
		\$ 211,199,803	\$ 227,721,264	\$ 47,218,485	\$ 31,805,625	\$ 21,198,627	\$ 22,090,456	\$ 5,684,880	\$ 118,230	\$ -	\$ -	\$ -	\$ 561,037,370

ACCUMULATED DEPRECIATION

BY PHYSICAL LOCATION- TASK 11 ADD. IN SERVICE- TASK 10 MARNE CONNECTOR AGREEMENT SADDLEBACK SEWER TASK 11/16/21- CSO ACC DEP		\$ 121,836,262	\$ 148,738,727	\$ 19,890,059	\$ 18,108,871	\$ 9,961,121	\$ 9,013,038	\$ 2,030,214	\$ 88,149	\$ -	\$ -	\$ -	\$ 329,666,441
			(157,139)		211,057	12,862		(145,051)	(21,572)				(323,762)
			(69,740,000)										223,919
	\$		(462,485)				462,485						(69,740,000)
			(37,983)				37,983						
			(55,141)					6,278					
			(6,701)					46	259				
			(863,943)				127,525	23,550	21,773				
			106,581										
			(139,825)					20,935	118,890				
								(88,625)	88,625				
			23,386					34,186					
			(4,700,593)				889,106	833,530	1,241,870	305,292	1,770,244	611,015	
		\$ 121,836,262	\$ 72,844,709	\$ 21,221,541	\$ 16,500,000	\$ 10,807,513	\$ 10,882,901	\$ 2,186,825	\$ 682,424	\$ 1,770,244	\$ 1,770,244	\$ 611,015	\$ 259,826,590
			(481,988)	\$ 2,349,726	\$ 1,542,389	\$ 1,267,405	\$ 1,992,781	\$ 483,023	\$ 615,847	\$ 1,770,244	\$ 1,770,244	\$ 611,015	\$ 10,553,606
		\$ 121,836,262	\$ 73,326,697	\$ 18,871,815	\$ 15,037,611	\$ 9,540,108	\$ 8,890,120	\$ 1,703,802	\$ 66,577	\$ -	\$ -	\$ -	\$ 249,272,992

CITY OF GRAND RAPIDS, MICHIGAN
SEWAGE DISPOSAL SYSTEM FUND
RECONCILIATION OF CONSTRUCTION COST & ACCUMULATED DEPRECIATION- PHYSICAL LOCATION & ZONEGATING
FISCAL YEAR ENDED JUNE 30, 2019

COST CENTER	AMOUNT	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	TOTAL	
CONSTRUCTION COST- BY PHYSICAL LOCATION:														
BY PHYSICAL LOCATION- TASK 11														
IN SERVICE- TASK 10/8		\$ 177,886,655	\$ 40,764,471	\$ 42,556,694	\$ 22,157,311	\$ 19,369,546	\$ 6,267,917	\$ 125,288	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 742,195,380
MARINE CONNECTOR AGREEMENT		33,313,148	596,469	755,049	190,241	92,403	142,080	(515,311)	(78,116)	-	-	-	-	37,122,503
SADDLEBACK SEWER		-	-	1,115,707	71,453	-	-	-	-	-	-	-	-	(805,000)
TASK 11/16/21- CSO COST		(187,348,706)	-	-	-	-	-	-	-	-	-	-	-	(187,348,706)
O'BRIEN														-
VANPORTFLEET / LEONARD HTS														-
REMEMBRANCE / 3 MILE														-
16th AVENUE														-
HAYES- WEST														-
HAYES- EAST														-
KINGSBURY	\$		323,154											-
MEADOWOOD TRAILS														-
OAK HOLLOW														-
COLLINDALE														-
THORNAPPLE														-
6000 28TH ST														-
THORNHILLS														-
ROBINHOOD														-
CASCADE SPRINGS														-
SHOREHAVEN														-
EAGLECREST														-
GREENRIER														-
LINGCOLN SCHOOL														-
REEDS LAKE														-
KRAFT														-
ORCHARD VISTA														-
BIRD AVE-ALPINE ESTATES														-
EAST PARIS														-
SERVICE MAINS														-
LESS- SERVICE MAINS- TOTAL SUBS- PHY. LOC.			(23,602,073)	(19,707,869)	(2,312,401)	(140,457)	(590,665)	-	-	-	-	-	-	(60,193,793)
ADD- SERVICE MAINS- TOTAL ADDS- PHY. LOC.			12,242,493	7,086,044	393,366	12,418	23,913	-	-	-	-	-	-	30,067,011
TOTAL- PHYSICAL LOCATION COST		\$ 211,199,803	\$ 41,218,485	\$ 31,805,625	\$ 21,198,627	\$ 22,090,456	\$ 5,684,880	\$ 118,230	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 561,037,395
CONSTRUCTION COST- ZONEGATING:														
LIFT STATIONS / CHAMBERS:														
FULLER-BROOKVIEW	\$		(719,774)	-	-	719,774	-	-	-	-	-	-	-	-
FULTON- MIDDLEBORROW			(37,983)	-	-	37,983	-	-	-	-	-	-	-	-
WEALTHY ST EXT- CHAMBER			(135,813)	120,351	-	-	15,462	-	-	-	-	-	-	-
WEALTHY			(6,701)	6,396	-	-	46	259	-	-	-	-	-	-
MARKET			(1,512,508)	1,209,903	-	223,259	41,229	38,117	-	-	-	-	-	-
VANPORTFLEET / LEONARD HTS			387,203	(387,203)	-	-	-	-	-	-	-	-	-	-
REMEMBRANCE / 3 MILE			-	(225,760)	-	-	33,801	191,959	-	-	-	-	-	-
16th AVENUE			-	-	-	-	-	-	-	-	-	-	-	-
HAYES- WEST			-	-	-	-	(141,105)	141,105	-	-	-	-	-	-
HAYES- EAST			-	-	-	-	-	-	-	-	-	-	-	-
O'BRIEN			41,613	(102,442)	-	-	60,829	-	-	-	-	-	-	-
SERVICE MAINS- ZONEGATED COST			2,077,397	2,435,510	4,306,526	4,536,217	1,840,110	1,355,482	363,128	253,522	6,405,295	976,207	30,126,807	
TOTAL- ZONEGATED COST		\$ -	\$ 93,434	\$ 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	
GRAND TOTAL- COST		\$ 211,199,803	\$ 47,417,143	\$ 34,241,135	\$ 25,505,153	\$ 27,607,689	\$ 7,535,252	\$ 1,845,152	\$ 363,128	\$ 253,522	\$ 6,405,295	\$ 976,207	\$ 591,164,202	

CITY OF GRAND RAPIDS, MICHIGAN
SEWAGE DISPOSAL SYSTEM FUND
RECONCILIATION OF CONSTRUCTION COST & ACCUMULATED DEPRECIATION- PHYSICAL LOCATION & ZONEGATING
FISCAL YEAR ENDED JUNE 30, 2019

COST CENTER	AMOUNT	PHYSICAL LOCATION:										TOTAL				
		INTEGRATED SYSTEM	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		
ACCUMULATED DEPRECIATION:																
BY PHYSICAL LOCATION- TASK 11		\$ 121,836,262	\$ 150,237,175	\$ 18,588,219	\$ 18,108,871	\$ 10,196,475	\$ 8,688,209	\$ 1,900,097	\$ 111,133	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 329,666,441
IN SERVICE- TASK 10		-	-	-	-	-	-	-	-	-	-	-	-	-	-	(323,162)
MARINE CONNECTOR AGREEMENT		-	(157,139)	-	-	-	-	(145,051)	(21,572)	-	-	-	-	-	-	223,919
SADDLEBACK SEWER		-	-	-	211,057	12,862	-	-	-	-	-	-	-	-	-	(69,740,000)
TASK 11/16/21- CSO ACC. DEPRECIATION			(69,740,000)													
O'BRIEN			(307,151)	307,151												
VANPORTFLET			(341,136)	341,136												
REMEMBRANCE / 3 MILE			(751,419)	751,419					54,322							
16th AVENUE			(64,322)													
HAYES- WEST			(88,625)					88,625								
HAYES- EAST			(116,605)					116,605								
KINGSBURY	\$	128,750		128,750												
MEADOWOOD TRAILS		20,052				20,052										
OAK HOLLOW		20,052					20,052									
COLLINDALE		20,052														
THORNAPPLE		121,158		20,052												
6000 28TH ST		37,134				121,158										
THORNHILLS		47,363				37,134										
ROBINHOOD		71,306				47,363										
CASCADE SPRINGS		43,652					77,306									
SHOREHAVEN		31,461						43,652								
EAGLECREST		60,933														
GREENRIER		17,778														
LINGOLN SCHOOL		52,626														
REEDS LAKE		274,765														
KRAFT		31,461														
ORCHARD VISTA		14,561														
BIRD AVE-ALPINE ESTATES		228,654														
EAST PARIS		161,739														
SERVICE MAINS																
LESS- SERVICE MAINS- TOTAL SUBS- PHY. LOC.			(11,788,074)	(4,093,328)	(5,539,946)	(511,764)	(134,839)	(189,013)	-	-	-	-	-	-	-	(22,256,964)
ADD- SERVICE MAINS- TOTAL ADDS- PHY. LOC.			6,273,190	3,075,084	2,257,629	77,888	11,921	7,652	-	-	-	-	-	-	-	11,703,364
		\$ 121,836,262	\$ 71,776,397	\$ 19,118,483	\$ 15,037,611	\$ 10,090,842	\$ 9,490,605	\$ 1,778,915	\$ 143,883	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 249,272,998
ACCUMULATED DEPRECIATION- ZONEGATED																
LIFT STATIONS / CHAMBERS:																
FULLER-BROOKVIEW	\$	805,035	(462,485)	-	-	-	462,485	-	-	-	-	-	-	-	-	-
FULTON-MIDDLEBORROW		37,983	(37,983)	-	-	-	37,983	-	-	-	-	-	-	-	-	-
WEALTHY ST EXT- CHAMBER		186,335	(55,141)	48,863	-	-	-	6,278	-	-	-	-	-	-	-	-
WEALTHY		20,444	(6,701)	6,396	-	-	-	46	259	-	-	-	-	-	-	-
MARKET		7,405,646	(863,943)	691,095	-	-	127,525	23,550	21,773	-	-	-	-	-	-	-
VANPORTFLET		341,136	106,581	(106,581)	-	-	-	-	-	-	-	-	-	-	-	-
REMEMBRANCE / 3 MILE		751,419	(139,825)	-	-	-	-	20,935	118,890	-	-	-	-	-	-	-
16th AVENUE		54,322	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAYES- WEST		88,625	-	-	-	-	-	(88,625)	88,625	-	-	-	-	-	-	-
HAYES- EAST		116,605	-	-	-	-	-	-	-	-	-	-	-	-	-	-
O'BRIEN		307,151	23,386	-	-	-	-	34,186	-	-	-	-	-	-	-	-
SERVICE MAINS-ZONEGATED ACC. DEPRECIATION			814,298	1,907,350	1,542,389	1,267,405	1,364,788	486,653	386,300	244,484	158,680	1,770,244	611,015	10,553,006		
TOTAL- ZONEGATED ACC. DEPRECIATION			(481,988)	2,349,726	1,542,389	1,267,405	1,992,781	483,023	615,847	244,484	158,680	1,770,244	611,015	10,553,006		
GRAND TOTAL- ACC. DEPRECIATION		\$ 121,836,262	\$ 71,294,409	\$ 21,468,209	\$ 16,580,000	\$ 11,358,247	\$ 11,483,386	\$ 2,261,938	\$ 759,730	\$ 244,484	\$ 158,680	\$ 1,770,244	\$ 611,015	\$ 259,826,604		

CITY OF GRAND RAPIDS, MICHIGAN
SEWAGE DISPOSAL SYSTEM FUND
ADJUSTED OPERATING EXPENSE ZONEGATING ALLOCATION BY GOVERNMENTAL UNIT - TASK #22
FISCAL YEAR ENDED JUNE 30, 2019

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	\$ 17,135,013	\$ 17,135,013												
LIFT STATIONS:														
A. INTERCEPTOR	253,752		224,149	23,680	-	-	-	4,370	-	807	746	-	-	-
B. TRUNK	164,630		54,903	57,757	-	-	26,705	21,081	-	4,184	-	-	-	-
C. LOCAL COLLECTOR	514,205		75,078	61,551	-	-	98,810	195,701	-	25,736	24,445	-	32,884	-
SEWER LINES:														
A. INTERCEPTOR	273,689		157,150	39,359	69,547	7,633	-	-	-	-	-	-	-	-
B. TRUNK	617,532		218,834	152,018	143,132	55,189	55,189	31,556	-	16,118	685	-	-	-
C. LOCAL COLLECTOR	4,355,888		2,707,663	547,361	425,788	265,099	334,968	31,157	49,396	25,613	18,056	-	-	-
D. ZONEGATING			(105,545)	11,278	(23,581)	20,961	-	-	(6,095)	9,569	2,962	29,846	11,392	-
BULK METERING STATIONS	5,391		-	-	3,020	-	-	-	-	-	-	-	-	931
CUSTOMER ACCOUNTING *	3,484,849		2,704,069	267,845	219,092	93,255	-	178,320	-	11,570	10,698	-	-	-
INDUSTRIAL PRETREATMENT	721,810													
SUBTOTAL OPERATING EXPENSE	27,526,759	17,856,823	6,036,301	1,160,849	836,998	567,652	797,153	101,716	80,243	2,962	62,730	12,323	1,264	
ADMINISTRATIVE EXPENSE	2,881,124	1,831,270	677,214	119,049	85,837	58,214	81,750	10,431	8,229	304	6,433	1,264		
TOTAL	\$ 30,407,882	\$ 19,688,093	\$ 6,713,515	\$ 1,279,898	\$ 922,835	\$ 625,866	\$ 878,903	\$ 112,147	\$ 88,472	\$ 3,266	\$ 69,163	\$ 13,587		

* 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:	(54)													
A. INTERCEPTORS	(1)		(1)	(3)	(3)	(1)	(1)	(1)	(1)	(5)	(1)	(1)	(1)	
B. TRUNK	(8)		(3)	(3)	(3)	(9)	(9)	(17)	(17)	(5)	(1)	(1)	(1)	
C. LOCAL	(45)		(9)	(3)	(3)	(9)	(9)	(17)	(17)	(5)	(1)	(1)	(1)	
SEWER LINES:														
TOTAL MILES:	921.21													
A. INTERCEPTOR	48.05		57,419%	14,381%	25,411%	2,789%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
MILES			27.59	6.91	12.21	1.34	-	-	-	-	-	-	-	-
B. TRUNK LINES	108.42		35,437%	24,617%	23,178%	8,937%	5,110%	5,110%	2,610%	2,610%	0.12	0.111%	0.000%	0.000%
MILES			38.42	26.69	25.13	9.69	5.54	5.54	2.83	2.83	0.12	0.111%	0.000%	0.000%
C. LOCAL COLLECTOR	764.74		62,161%	12,566%	9,775%	6,086%	7,690%	7,690%	1,134%	1,134%	0.588%	0.000%	0.000%	0.000%
MILES			475.37	96.10	74.75	46.54	58.81	58.81	8.67	8.67	4.50	0.588%	0.000%	0.000%
D. ZONEGATING			(18.53)	1.98	(4.14)	3.68	5.47	5.47	(1.07)	(1.07)	3.17	1.68	0.52	2.00
MILES			(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
BULK METERING STATIONS	(3)													
CUSTOMER ACCTG (1)	75,342.00		77,595%	7,686%	6,287%	2,676%	5,117%	5,117%	0.332%	0.332%	0.307%	0.039%	0.223%	0.044%
NO. OF METERS			58,462.00	5,791.00	4,737.00	2,016.00	3,855.00	3,855.00	250.00	250.00	231.00	0.039%	0.223%	0.044%
INDUSTRIAL PRETREATMENT														
ADMINISTRATIVE EXPENSE (2)			23,505%	4,132%	2,979%	2,021%	2,837%	2,837%	0.362%	0.362%	0.286%	0.039%	0.223%	0.044%
			63,561%											

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	\$ 36,983,971	71.9780%	\$ 246,473
CITY OF WALKER	4,559,278	8.8732%	30,384
CITY OF KENTWOOD	4,237,341	8.2467%	28,239
CASCADE TOWNSHIP	2,422,686	4.7150%	16,145
GRAND RAPIDS TOWNSHIP	2,438,349	4.7455%	16,250
TALLMADGE TOWNSHIP	469,450	0.9136%	3,128
WRIGHT TOWNSHIP	<u>271,277</u>	<u>0.5280%</u>	<u>1,808</u>
	<u>\$ 51,382,352</u>	<u>100.0000%</u>	<u>\$ 342,427</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, 2019

COST CENTER BY PHYSICAL LOCATION- TASK 11	DEPRECIATION EXPENSE	INTEGRATED SYSTEM	RETAIL						WHOLESALE						TOTAL
			CITY OF GR	CITY OF WALKER	CITY OF KENTWOOD	CITY OF ASCADIA	GR TOWNSHIP	TALLMADGE TOWNSHIP	WRIGHT TOWNSHIP	CITY OF EAST GR	CALEDONIA TOWNSHIP	ADA TOWNSHIP	GAINES TOWNSHIP		
ADD-IN SERVICE-TASK 108		\$ 3,812,093	\$ 8,350,083	\$ 901,383	\$ 814,305	\$ 427,472	\$ 118,262	\$ 2,505							\$ 14,884,563
MARINE CONNECTOR AGREEMENT		713,238	40,662	11,929	15,102	3,805	2,842	-							789,126
SADDLEBACK SEWER			(2,695)				(10,307)	(1,563)							(14,565)
LESS: TASK 11/16/21-CSO DEP. EXP.			(3,776,768)												23,742
LIFT STATIONS / CHAMBERS:															(3,776,768)
FULLER-BROOKVIEW (GR)	\$ 26,326		(15,124)	-	-	15,124	-	-	-	-	-	-	-	-	-
FULTON- MIDDLEBORO (GR)			(2,444)	2,166	-	-	278	-	-	-	-	-	-	-	-
WEALTHY			(45,887)	36,707	-	6,773	1,251	1,156	-	-	-	-	-	-	-
MARKET	393,343		10,932	(10,932)	-	-	1,741	9,889	-	-	-	-	-	-	-
VANPORTFLIET	34,991		915	(2,253)	-	-	1,338	-	-	-	-	-	-	-	-
REMEMBRANCE / 3 MILE	62,502														
O'BRIEN	12,023														
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	826		(826)	-	-	-	-	826	-	-	-	-	-	-	-
HAYES- WEST	2,160		(2,160)	-	-	-	-	2,160	-	-	-	-	-	-	-
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			(146,367)	30,791	(214,524)	44,771	24,849	26,914	4,622	4,829	123,583	18,595			
ADJUSTED BY ZONEGATING		4,525,331	4,371,859	988,161	637,196	508,455	144,675	41,887	4,622	4,829	123,583	18,595			11,906,388
LESS CONTRIBUTIONS AMORTIZED		(1,005,355)	(1,129,393)	(467,728)	(472,935)	(372,744)	(103,386)	-	-	-	-	-	(14,384)		(3,881,276)
TASK NO. 21		\$ 3,519,976	\$ 3,242,466	\$ 490,433	\$ 164,261	\$ 135,711	\$ 41,290	\$ 41,887	\$ 4,622	\$ 4,829	\$ 123,583	\$ 4,211			\$ 8,025,112
TOTAL															

**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>6/30/19</u>	<u>PRO FORMA *</u> <u>6/30/20</u>
REVENUES:		
RETAIL/WHOLESALE SEWAGE SERVICE	\$ 53,831,723	\$ 54,767,122
CONNECTION FEES/FRONT FOOT FEES	379,758	575,000
SEWAGE SURCHARGES	2,311,653	2,131,500
OTHER OPERATING REVENUES	920,650	719,625
INTEREST ON INVESTMENTS	1,184,260	1,095,393
MISCELLANEOUS	33	1,532,150
TOTAL REVENUES	<u>\$ 58,628,076</u>	<u>\$ 60,820,790</u>
OPERATING EXPENSES:		
OPERATIONS & MAINTENANCE	\$ 30,331,893	\$ 28,214,518
DEPRECIATION	<u>14,886,913</u>	<u>14,886,913</u>
TOTAL EXPENSES	<u>\$ 45,218,806</u>	<u>\$ 43,101,431</u>
ADDITIONS: DEPRECIATION	<u>14,886,913</u>	<u>14,886,913</u>
NET EARNINGS OF THE SYSTEM	<u>\$ 28,296,183</u>	<u>\$ 32,606,272</u>
DEBT SERVICE		
SERIES 2018 BONDS	\$ 2,763,500	\$ 2,761,500
SERIES 2016 BONDS	3,880,750	3,881,750
SERIES 2014 BONDS	3,468,500	3,462,500
SERIES 2013 BONDS	2,034,800	2,031,000
SERIES 2012 BONDS	2,163,600	2,163,800
SERIES 2010A&B BONDS (after BAB subsidy)	1,256,070	1,252,320
SERIES 2010 BONDS	1,481,250	1,481,250
SERIES 1998 BONDS	<u>4,409,525</u>	<u>4,408,450</u>
SENIOR LIEN	21,457,995	21,442,570
JUNIOR LIEN **	499,188	500,991
TOTAL	<u>\$ 21,957,183</u>	<u>\$ 21,943,561</u>
COVERAGE RATIO - SENIOR DEBT	<u>1.32</u>	<u>1.52</u>
COVERAGE RATIO - ALL DEBT	<u>1.29</u>	<u>1.49</u>

* SEWAGE SERVICE ADJUSTED FOR RATE REVISIONS OF 3.28% AND 3.49% EFFECTIVE 1/1/19 AND 1/1/20, RESPECTIVELY; OTHER REVENUES AND OPERATIONS & MAINTENANCE EXPENSE PER 2019 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		\$ 57,247,519
REVENUES FROM CURRENT RATES		
REU CHARGE	\$ 282,399	
MONTHLY METER CHARGE	18,634,845	
MONTHLY BILLING CHARGE	3,825,050	
COMMODITY CHARGE	<u>32,306,711</u>	<u>(55,049,005)</u>
INITIAL REQUIRED REVENUE INCREASE (DECREASE)		<u>\$ 2,198,514</u>
INITIAL PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES		<u>3.99%</u>
INITIAL SYSTEM REVENUE REQUIREMENTS FROM ABOVE		\$ 57,247,519
LESS: AMOUNT OF CIRCUIT BREAKER RELIEF TO REDUCE RR's TO RETAIL		(278,102)
SYSTEM REVENUE REQUIREMENTS		<u>\$ 56,969,417</u>
ACTUAL REQUIRED AMOUNT OF REVENUE INCREASE (DECREASE)		<u>\$ 1,920,412</u>
ACTUAL PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES		<u>3.49%</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	54,329	54,329	5,181	5,181	3,691	3,691	1,525	1,525	3,482	3,482	219	219	-	-
B 1"	1.7778	2,275	4,044	354	629	493	876	259	460	241	428	15	27	-	-
C 1 1/4"	2.7778	-	-	-	-	-	-	-	-	-	-	-	-	-	-
D 1 1/2"	4.0000	981	3,924	154	616	331	1,324	157	628	89	356	9	36	-	-
E 2"	7.1111	666	4,736	82	583	182	1,294	62	441	27	192	3	21	-	-
F 3"	16.0000	102	1,632	7	112	19	304	9	144	8	128	2	32	-	-
G 4"	28.4444	78	2,219	7	199	17	484	3	85	2	57	-	-	-	-
H 6" and over	64.0000	31	1,984	6	384	4	256	1	64	6	384	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		58,462	72,868	5,791	7,704	4,737	8,229	2,016	3,347	3,855	5,027	250	463	231	422,500
															75,342

Source: City of Grand Rapids, Michigan, Water/Sewer Customer Accounts/Meters Report, dated November 1, 2019.

CITY OF GRAND RAPIDS, MICHIGAN

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

SYSTEM REVENUE REQUIREMENTS \$ 38,851,246

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE

72,868 meter equivalents x \$ 15.02 x 12 = \$ 13,133,728

MONTHLY BILLING CHARGE

58,462 meters x \$ 3.57 x 12 = 2,504,512

COMMODITY CHARGE

6,627,589 units (100 CF) x \$ 3.33 = 22,069,871 (37,708,111)

REQUIRED REVENUE INCREASE (DECREASE) \$ 1,143,135

PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES 3.03%

CITY OF GRAND RAPIDS, MICHIGAN

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

COMMODITY CHARGE:

$$\frac{\text{INTEGRATED SYSTEM COST}}{\text{BILLED UNITS}} = \frac{\$23,728,875}{6,627,589} = \underline{\underline{\$ 3.58 /100 CF *}}$$

MONTHLY SERVICE CHARGE:

SYSTEM REVENUE REQUIREMENTS \$ 38,851,246

NEW COMMODITY CHARGE
6,627,589 x \$ 3.58 \$ 23,726,769

NEW MONTHLY BILLING CHARGE
58,462 x \$ 3.85 x 12 2,700,944 (26,427,713)

\$ 12,423,533

$$\text{MONTHLY METER CHARGE} = \frac{\$12,423,533}{72,868 \times 12} = \underline{\underline{\$ 14.21 \text{ MONTHLY}}}$$

<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	\$ 14.21	\$ 3.85	\$ 18.06	\$ 18.59
1"	1.7778	25.26	3.85	29.11	30.27
1 1/4"	2.7778	39.47	3.85	43.32	45.29
1 1/2"	4.0000	56.84	3.85	60.69	63.65
2"	7.1111	101.05	3.85	104.90	110.38
3"	16.0000	227.36	3.85	231.21	243.89
4"	28.4444	404.19	3.85	408.04	430.80
6" and over	64.0000	909.44	3.85	913.29	964.85

* NEW RATES EFFECTIVE, ON A PRO-RATA BASIS, JANUARY 1, 2020

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

SYSTEM REVENUE REQUIREMENTS * \$ 4,925,302

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE

7,704 meter equivalents x \$ 24.86 x 12 = \$ 2,298,257

MONTHLY BILLING CHARGE

5,791 meters x \$ 3.57 x 12 = 248,086

COMMODITY CHARGE

862,197 units (100 CF) x \$ 2.54 = 2,189,980 (4,736,323)

REQUIRED REVENUE INCREASE (DECREASE) \$ 188,979

PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES 3.99%

* REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 74,549

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

SYSTEM REVENUE REQUIREMENTS * \$ 4,494,063

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE

8,229 meter equivalents x \$ 4.18 x 12 = \$ 412,767

MONTHLY BILLING CHARGE

4,737 meters x \$ 3.57 x 12 = 202,933

COMMODITY CHARGE

1,409,099 units (100 CF) x \$ 2.63 = 3,705,930 (4,321,630)

REQUIRED REVENUE INCREASE (DECREASE) \$ 172,433

PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES 3.99%

* REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 116,539

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

SYSTEM REVENUE REQUIREMENTS * \$ 2,614,086

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE

3,347 meter equivalents x \$ 28.88 x 12 = \$ 1,159,936

MONTHLY BILLING CHARGE

2,016 meters x \$ 3.57 x 12 = 86,365

COMMODITY CHARGE

476,498 units (100 CF) x \$ 2.66 = 1,267,485 (2,513,786)

REQUIRED REVENUE INCREASE (DECREASE) \$ 100,300

PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES 3.99%

* REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 51,772

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

COMMODITY CHARGE:

PRESENT CHARGE x RATE ADJUSTMENT \$ 2.77 /100 CF *
 \$ 2.66 x 103.99%

MONTHLY SERVICE CHARGE:

SYSTEM REVENUE REQUIREMENTS **		\$ 2,614,086
NEW COMMODITY CHARGE		
476,498 x \$ 2.77		\$ 1,319,899
NEW MONTHLY BILLING CHARGE		
2,016 x \$ 3.85 x 12	93,139	(1,413,038)
		\$ 1,201,048

MONTHLY METER CHARGE = $\frac{\$1,201,048}{3,347 \times 12} = \underline{\underline{\$ 29.90 \text{ MONTHLY}}}$

METER SIZE	EQUIVALENT	MONTHLY SERVICE CHARGE			PRESENT
		METER	BILLING	TOTAL	
3/4" or less	1.0000	\$ 29.90	\$ 3.85	\$ 33.75	\$ 32.45
1"	1.7778	53.16	3.85	57.01	54.91
1 1/4"	2.7778	83.06	3.85	86.91	83.79
1 1/2"	4.0000	119.60	3.85	123.45	119.09
2"	7.1111	212.62	3.85	216.47	208.94
3"	16.0000	478.40	3.85	482.25	465.65
4"	28.4444	850.49	3.85	854.34	825.04
6" and over	64.0000	1,913.60	3.85	1,917.45	1,851.89

* NEW RATES EFFECTIVE, ON A PRO-RATA BASIS, JANUARY 1, 2020

** REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 51,772

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

SYSTEM REVENUE REQUIREMENTS * \$ 2,661,906

REVENUES FROM CURRENT RATES

MONTHLY METER CHARGE

5,027 meter equivalents x \$ 24.45 x 12 = \$ 1,474,922

MONTHLY BILLING CHARGE

3,855 meters x \$ 3.57 x 12 = 165,148

COMMODITY CHARGE

386,429 units (100 CF) x \$ 2.38 = 919,701 (2,559,771)

REQUIRED REVENUE INCREASE (DECREASE) \$ 102,135

PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES 3.99%

* REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 19,916

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

SYSTEM REVENUE REQUIREMENTS		\$	442,300
REVENUES FROM CURRENT RATES			
MONTHLY METER CHARGE			
463 meter equivalents	x	\$ 27.94	x 12 = \$ 155,235
MONTHLY BILLING CHARGE			
250 meters	x	\$ 3.57	x 12 = 10,710
COMMODITY CHARGE			
32,567 units (100 CF)	x	\$ 9.87	= <u>321,436</u>
			<u>(487,381)</u>
REQUIRED REVENUE INCREASE (DECREASE)			<u>\$ (45,081)</u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES			<u>-9.25%</u>

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

SYSTEM REVENUE REQUIREMENTS \$ 293,667

REVENUES FROM CURRENT RATES

REU CHARGE

422.500 meter equivalents x \$ 55.70 x 12 = \$ 282,399

MONTHLY METER CHARGE

422.500 meter equivalents x \$ - x 12 = -

MONTHLY BILLING CHARGE

231 meters x \$ - x 12 = -

COMMODITY CHARGE

25,929 units (100 CF) x \$ - = - (282,399)

REQUIRED REVENUE INCREASE (DECREASE) \$ 11,268

PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES 3.99%

* REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 15,326

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

MONTHLY REU CHARGE:

$$\frac{\text{SYSTEM REVENUE REQUIREMENTS **}}{\text{TOTAL REU'S * 12 MONTHS}} = \frac{\$293,667}{422.500 \times 12} = \$ \underline{\underline{57.92}} \quad \text{MONTHLY REU CHARGE *}$$

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	\$ 57.92	7.5000	\$ 434.40	19.0000	\$ 1,100.48
1.5000	86.88	8.0000	463.36	20.0000	1,158.40
2.0000	115.84	8.5000	492.32	25.0000	1,448.00
2.5000	144.80	9.0000	521.28	30.0000	1,737.60
3.0000	173.76	9.5000	550.24	35.0000	2,027.20
3.5000	202.72	10.0000	579.20	40.0000	2,316.80
4.0000	231.68	11.0000	637.12	50.0000	2,896.00
4.4000	254.85	12.0000	695.04	60.0000	3,475.20
4.5000	260.64	13.0000	752.96	70.0000	4,054.40
5.0000	289.60	14.0000	810.88	80.0000	4,633.60
5.5000	318.56	15.0000	868.80	90.0000	5,212.80
6.0000	347.52	16.0000	926.72	100.0000	5,792.00
6.5000	376.48	17.0000	984.64	150.0000	8,688.00
7.0000	405.44	18.0000	1,042.56	200.0000	11,584.00

*NEW RATES EFFECTIVE ON JANUARY 1, 2020

**REFLECTS RELIEF FROM CIRCUIT BREAKER, IN THE AMOUNT OF \$ 15,326

CITY OF EAST GRAND RAPIDS, MICHIGAN

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

INTEGRATED SYSTEM REVENUE REQUIREMENTS		\$	893,221
COMMODITY CHARGE			
432.019 units	x	\$	1,840.00
			794,915
			<hr/>
REQUIRED COMMODITY REVENUE INCREASE (DECREASE)		\$	<u>98,306</u>
NON-INTEGRATED SYSTEM REVENUE REQUIREMENTS		\$	26,747
MONTHLY SERVICE CHARGE			
\$2,243	x		12 MONTHS
			26,916
			<hr/>
REQUIRED SERVICE REVENUE INCREASE (DECREASE)		\$	<u>(169)</u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES			<u>11.94%</u>

CITY OF EAST GRAND RAPIDS, MICHIGAN

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

SYSTEM REVENUE REQUIREMENTS	\$ 919,968
NEW COMMODITY CHARGE *	
432.019 x \$ 2,068.00 =	(893,415)
	<hr/>
	<u>\$ 26,553</u>

MONTHLY SERVICE CHARGE * = \$ 26,553 / 12 = \$2,213

* NEW RATES EFFECTIVE ON JANUARY 1, 2020

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

INTEGRATED SYSTEM REVENUE REQUIREMENTS		\$ 153,597
COMMODITY CHARGE		
30.029 units	x	\$ 4,497.00
		135,040
		<hr/>
REQUIRED COMMODITY REVENUE INCREASE (DECREASE)		<u><u>\$ 18,557</u></u>
NON-INTEGRATED SYSTEM REVENUE REQUIREMENTS		\$ 8,864
MONTHLY SERVICE CHARGE		
\$752	x	12 MONTHS
		9,024
		<hr/>
REQUIRED SERVICE REVENUE INCREASE (DECREASE)		<u><u>\$ (160)</u></u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES		<u><u>12.77%</u></u>

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

SYSTEM REVENUE REQUIREMENTS	\$ 162,461
NEW COMMODITY CHARGE * 30.029 x \$ 5,115.00 =	(153,598)
	<hr/>
	<u>\$ 8,863</u>

MONTHLY SERVICE CHARGE * = \$ 8,863 / 12 = \$739

* NEW RATES EFFECTIVE ON JANUARY 1, 2020

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

INTEGRATED SYSTEM REVENUE REQUIREMENTS		\$ 819,399
COMMODITY CHARGE		
301.085 units x \$ 2,358.00		709,958

REQUIRED COMMODITY REVENUE INCREASE (DECREASE)		<u><u>\$ 109,441</u></u>
NON-INTEGRATED SYSTEM REVENUE REQUIREMENTS		\$ 572,822
MONTHLY SERVICE CHARGE		
\$46,008 x 12 MONTHS		552,096

REQUIRED SERVICE REVENUE INCREASE (DECREASE)		<u><u>\$ 20,726</u></u>
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES		<u><u>10.31%</u></u>

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

SYSTEM REVENUE REQUIREMENTS	\$ 1,392,221
NEW COMMODITY CHARGE *	
301.085 x \$ 2,721.00 =	(819,252)
	<hr/>
	<u>\$ 572,969</u>

MONTHLY SERVICE CHARGE * = \$572,969 / 12 = \$47,747

* NEW RATES EFFECTIVE ON JANUARY 1, 2020

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

INTEGRATED SYSTEM REVENUE REQUIREMENTS		\$ 192,666
COMMODITY CHARGE		
115.345 units x \$ 1,668.00		192,395
		192,395
REQUIRED COMMODITY REVENUE INCREASE (DECREASE)		\$ 271
NON-INTEGRATED SYSTEM REVENUE REQUIREMENTS		\$ 19,531
MONTHLY SERVICE CHARGE		
\$1,605 x 12 MONTHS		19,260
		19,260
REQUIRED SERVICE REVENUE INCREASE (DECREASE)		\$ 271
PERCENTAGE INCREASE (DECREASE) OVER EXISTING RATES		0.26%

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

SYSTEM REVENUE REQUIREMENTS	\$ 212,197
NEW COMMODITY CHARGE * 115.345 x \$ 1,670.00 =	(192,626)
	<hr/>
	<u>\$ 19,571</u>

MONTHLY SERVICE CHARGE * = \$ 19,571 / 12 = \$1,631

* NEW RATES EFFECTIVE ON JANUARY 1, 2020

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	2019 Rate	2020 Rate	% Change
Domestic	Property is domicile for single or multiple family use, such as homes, apartments, duplexes, condominium, etc.	\$ 105.00	\$ 105.00	0.00%
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).	\$ 135.00	\$ 141.00	4.44%

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	2019	\$2,800	3.57%
	2020	\$2,900	
60 feet	2019	\$3,300	3.03%
	2020	\$3,400	
66 feet	2019	\$3,600	2.78%
	2020	\$3,700	
80 feet	2019	\$4,300	2.33%
	2020	\$4,400	
100 feet	2019	\$5,300	1.89%
	2020	\$5,400	

MEMORANDUM

CITY OF GRAND RAPIDS

Date: October 16, 2019

To: Molly Clarin
Fiscal Services Manager

From: William Kaiser
Acting 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 (NH₃). 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 cover 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 – Liquid Industrial Byproduct

- \$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.

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.

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

Description	Rate Study Year		Wastewater Surcharges					
	2019	2020	Volume	BOD	TSS	Phos	NH3	Industrial
Operation & Maintenance (See Part 2)	\$ 30,282,620	\$ 4,658,264	\$ 4,808,883	\$ 5,949,339	\$ 1,049,737	\$ 543,527	\$ 721,810	\$ 12,551,060
Depreciation (See Part 3)	8,024,624	964,016	995,132	1,231,147	217,218	112,463	-	4,504,648
Return on System Investment (See Part 3)	13,815,075	1,167,971	1,205,671	1,491,619	263,174	136,257	-	9,550,353
Total	\$ 52,122,319	\$ 6,790,251	\$ 7,009,686	\$ 8,672,105	\$ 1,530,129	\$ 792,247	\$ 721,810	\$ 26,606,091

Recommended Surcharge Rate - 2020

\$ 0.301 \$ 0.489 \$ 2.873 \$ 0.299

Actual Surcharge Rate - 2019

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

Change in Surcharge Rate - Amount- 2019 to 2020

\$ 0.023 \$ 0.023 \$ 0.424 \$ 0.035

Change in Surcharge Rate - Percent- 2019 to 2020

8.27% 4.94% 17.31% 13.26%

Loadings - lb/day (Per N.Pasch) *

63,855 48,538 1,459 7,249

Loadings - lb/year

23,306,953 17,716,370 532,657 2,645,885

* 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	Wastewater Surcharges					Industrial	Other
	Base Year- 2019	Calendar Year- 2020				BOD	TSS	Phos	NH3			
Wastewater Treatment Plant												
Pre-Treatment				(1)	1,362,177							
Primary Treatment	1,324,879	1,362,177	WWTP	(2)	-	652,407	1,304,814	-	217,469			
Secondary Treatment	2,115,144	2,174,690	WWTP	(3)	815,542	1,304,869	489,326	489,326	163,109			
Disinfection/Dechlorination	3,172,849	3,262,172	WWTP	(4)	1,268,339	-	-	-	-			
Phosphorus Removal	1,233,610	1,268,339	WWTP	(5)	397,461	-	-	397,462	-			
Residue Handling/Disposal	773,157	794,923	WWTP	(6)	814,746	2,851,607	4,155,199	162,949	162,949			
	7,924,362	8,147,450	WWTP			4,808,883	5,949,339	1,049,737	543,527			
	16,544,001	17,009,751										
Lift Stations												
Interceptor		253,752	Collection	(11)	-	-	-	-	-			253,752
Trunk		164,630	Collection	(11)	-	-	-	-	-			164,630
Local Collector		514,205	Collection	(11)	-	-	-	-	-			514,205
Sewer Lines												
Interceptor		273,689	Collection	(11)	-	-	-	-	-			273,689
Trunk		617,532	Collection	(11)	-	-	-	-	-			617,532
Local Collector		4,355,888	Collection	(11)	(0)	-	-	-	-			4,355,888
Bulk Meter Stations		5,391	Collection	(7)	-	-	-	-	-			5,391
Customer Accounting		3,484,849	Admin	(8)	(0)	-	-	-	-			3,484,849
Industrial Pretreatment		721,810	Industry	(9)	-	-	-	-	-	721,810		-
Subtotal		27,401,496				4,808,883	5,949,339	1,049,737	543,527	721,810		9,669,936
Admin		2,881,124	Admin	(10)	(0)	-	-	-	-	-		2,881,124
Total		30,282,620				4,808,883	5,949,339	1,049,737	543,527	721,810		12,551,060
WWTP Allocation Factors		100.000%			27.387%	28.271%	34.976%	6.171%	3.195%	0.000%		0.000%

(1) Per N. Pasch 10/30/19
 (2) Primary Allocation of Current Year for Calendar 2020, based on 2019 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)	\$ 3,519,976	\$ 964,016	\$ 995,132	\$ 1,231,147	\$ 217,218	\$ 112,463	\$ -	\$ -
Other	4,504,648	-	-	-	-	-	4,504,648	-
Total	\$ 8,024,624	\$ 964,016	\$ 995,132	\$ 1,231,147	\$ 217,218	\$ 112,463	\$ -	\$ 4,504,648

Return on System Investment- Task 21

Description	Amount	Volume	Wastewater Surcharges				Industrial	Other
			BOD	TSS	Phos	NH3		
Integrated System (1)	\$ 4,264,692	\$ 1,167,971	\$ 1,205,671	\$ 1,491,619	\$ 263,174	\$ 136,257	\$ -	\$ -
Other	9,550,383	-	-	-	-	-	9,550,383	-
Total	\$ 13,815,075	\$ 1,167,971	\$ 1,205,671	\$ 1,491,619	\$ 263,174	\$ 136,257	\$ -	\$ 9,550,383

(1) Allocated on WWTP Allocation Factors * 27.3870% 28.2710% 34.9760% 3.1950%

*** 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					Other %
					BOD %	TSS %	Phos %	NH3 %	Industrial %	
(1)	Pre-Treatment	100.000%	WWTP	100.000%	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%
(3)	Secondary Treatment	100.000%	WWTP	25.000%	40.000%	15.000%	15.000%	5.000%	0.000%	0.000%
(4)	Disinfection/Dechlorination	100.000%	WWTP	100.000%	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%
(5)	Phosphorus Removal	100.000%	WWTP	50.000%	0.000%	0.000%	50.000%	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%
(7)	Bulk Metering Stations	100.000%	Collection	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	100.000%
(8)	Customer Accounting	100.000%	Admin	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	100.000%
(9)	Industrial Pretreatment	100.000%	Industry	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%
(11)	Collection System	100.000%	Collection	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 2019 RS 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)	\$ 4,808,883	\$ 1,049,737	\$ 543,527	\$ 96,178	\$ 20,995	\$ 10,871
Disinfection/Dechlorination (1)(3)	\$ 1,268,339	\$ 3,223	\$ 394,845	\$ 17,405	\$ 64	\$ 7,897
Total	\$ 5,679,154	\$ 1,052,960	\$ 938,372	\$ 113,583	\$ 21,059	\$ 18,767
Proposed Concentrated Waste Adjustment				\$ 0.115	\$ 5.770	\$ 0.042
Recommended Surcharge Rate - 2020				\$ 0.301	\$ 2.873	\$ 0.299

Surcharge with Adjustment

Concentrated Waste Loadings - lb/day	2,700	10	1,225
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 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, 2019 allocation for WWTP. This is allocated based on the Surcharge Adjustment Factor - see footnote 1.

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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: 8/27/2019

Permit Fee: \$ 400.00

IPP Costs:

Labor: \$ 64.34 per hour
 Vehicle: \$ 4.11 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	\$	5.00	ea.
TSS	\$	7.00	ea.
BOD	\$	12.00	ea.
COD	\$	12.00	ea.
total phosphorus	\$	16.00	ea.
pH	\$	5.00	ea.
EPA 624.1	\$	50.00	ea.
EPA 625.1	\$	125.00	ea.
BTEX/MTBE	\$	35.00	ea.
sulfide	\$	19.00	ea.
oil & grease	\$	20.00	ea.
total cyanide	\$	18.00	ea.
hex chrome	\$	20.00	ea.
fecal coliform	\$	20.00	ea.
Ammonia (NH3-N)	\$	12.00	ea.
Mercury (EPA 245.1 or 245.2)	\$	15.00	ea.
Pesticides and PCBS EPA 608	\$	90.00	ea.
PCB's	\$	45.00	ea.
Phenols	\$	18.00	ea.
PFAS EPA 537 Modified (sample, duplicate and blank)	\$	245.00	ea.
PFAS by LCMSMS (sample, duplicate and blank)	\$	285.00	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

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: \$ 862.70
Amount Due: \$ 1,262.70

Composite Samples: 4

IPP Requirements: man hours = 6.0 x \$ 64.34 = \$ 386.04
sampler days = 4.0 x \$ 35.00 = \$ 140.00
vehicle hours = 6.0 x \$ 4.11 = \$ 24.66

Total IPP Composite Costs: \$ 550.70

Laboratory Analysis: (each composite)
metals 7 x \$ 5.00 = \$ 35.00
TSS x \$ 7.00 = \$ -
BOD x \$ 12.00 = \$ -
total phosphorus x \$ 16.00 = \$ -
pH x \$ 5.00 = \$ -
EPA 625.1 x \$ 125.00 = \$ -
sulfide x \$ 19.00 = \$ -
oil & grease x \$ 20.00 = \$ -
hex chrome x \$ 20.00 = \$ -
fecal coliform x \$ 20.00 = \$ -
other x = \$ -
total per composite: \$ 35.00

Total Laboratory Composite Costs: \$ 140.00

Total Composite Sample Costs: \$ 690.70

Grab Samples: 4

IPP Requirements: man hours = 0.0 x \$ 64.34 = \$ -
vehicle hours = 0.0 x \$ 4.11 = \$ -

Total IPP Grab Costs: \$ -

Laboratory Analysis: (each grab)
metals x \$ 5.00 = \$ -
TSS x \$ 7.00 = \$ -
BOD x \$ 12.00 = \$ -
total phosphorus x \$ 16.00 = \$ -
pH 1 x \$ 5.00 = \$ 5.00
EPA 624.1 x \$ 50.00 = \$ -
EPA 625.1 x \$ 125.00 = \$ -
BTEX/MTBE x \$ 35.00 = \$ -
sulfide x \$ 19.00 = \$ -
oil & grease x \$ 20.00 = \$ -
total cyanide 1 x \$ 18.00 = \$ 18.00
hex chrome 1 x \$ 20.00 = \$ 20.00
fecal coliform x \$ 20.00 = \$ -
other x = \$ -
total per grab: \$ 43.00

Total Laboratory Grab Costs: \$ 172.00

Total Grab Sample Costs: \$ 172.00

Total Analytical Permit Costs: \$ 862.70

Permit No: Example 2

Company: Litho Process

Facility Address:
City, State, Zip

Permit Fee: \$ 400.00
Analytical Fee: \$ 177.68
Amount Due: \$ 577.68

Composite Samples: 1

IPP Requirements: man hours = 1.5 x \$ 64.34 = \$ 96.51
sampler days = 1.0 x \$ 35.00 = \$ 35.00
vehicle hours = 1.5 x \$ 4.11 = \$ 6.17

Total IPP Composite Costs: \$ 137.68

Laboratory Analysis: (each composite)
metals x \$ 5.00 = \$ -
TSS 1 x \$ 7.00 = \$ 7.00
BOD 1 x \$ 12.00 = \$ 12.00
total phosphorus 1 x \$ 16.00 = \$ 16.00
pH x \$ 5.00 = \$ -
EPA 625 x \$ 125.00 = \$ -
sulfide x \$ 19.00 = \$ -
oil & grease x \$ 20.00 = \$ -
hex chrome x \$ 20.00 = \$ -
fecal coliform x \$ 20.00 = \$ -
other x = \$ -
total per composite: \$ 35.00

Total Laboratory Composite Costs: \$ 35.00

Total Composite Sample Costs: \$ 172.68

Grab Samples: 1

IPP Requirements: man hours = 0.0 x \$ 64.34 = \$ -
vehicle hours = 0.0 x \$ 4.11 = \$ -

Total IPP Grab Costs: \$ -

Laboratory Analysis: (each grab)
metals x \$ 5.00 = \$ -
TSS x \$ 7.00 = \$ -
BOD x \$ 12.00 = \$ -
total phosphate x \$ 16.00 = \$ -
pH 1 x \$ 5.00 = \$ 5.00
EPA 624 x \$ 50.00 = \$ -
EPA 625 x \$ 125.00 = \$ -
BTEX/MTBE x \$ 35.00 = \$ -
sulfide x \$ 19.00 = \$ -
oil & grease x \$ 20.00 = \$ -
total cyanide x \$ 18.00 = \$ -
hex chrome x \$ 20.00 = \$ -
fecal coliform x \$ 20.00 = \$ -
other x = \$ -
total per grab: \$ 5.00

Total Laboratory Grab Costs: \$ 5.00

Total Grab Sample Costs: \$ 5.00

Total Analytical Permit Costs: \$ 177.68

Permit No: Example 3

Company: Stripping Process

Facility Address:
City, State, Zip

Permit Fee: \$ 400.00
Analytical Fee: \$ 167.68
Amount Due: \$ 567.68

Composite Samples: 1

IPP Requirements: man hours = **1.5** x \$ 64.34 = **\$ 96.51**
sampler days = **1.0** x \$ 35.00 = **\$ 35.00**
vehicle hours = **1.5** x \$ 4.11 = **\$ 6.17**

Total IPP Composite Costs: \$ 137.68

Laboratory Analysis: (each composite)
metals **5** x \$ 5.00 = **\$ 25.00**
TSS x \$ 7.00 = **\$ -**
BOD x \$ 12.00 = **\$ -**
total phosphorus x \$ 16.00 = **\$ -**
pH x \$ 5.00 = **\$ -**
EPA 625 x \$ 125.00 = **\$ -**
sulfide x \$ 19.00 = **\$ -**
oil & grease x \$ 20.00 = **\$ -**
hex chrome x \$ 20.00 = **\$ -**
fecal coliform x \$ 20.00 = **\$ -**
other x = **\$ -**

total per composite: \$ 25.00

Total Laboratory Composite Costs: \$ 25.00

Total Composite Sample Costs: \$ 162.68

Grab Samples: 1

IPP Requirements: man hours = **0.0** x \$ 64.34 = **\$ -**
vehicle hours = **0.0** x \$ 4.11 = **\$ -**

Total IPP Grab Costs: \$ -

Laboratory Analysis: (each grab)
metals x \$ 5.00 = **\$ -**
TSS x \$ 7.00 = **\$ -**
BOD x \$ 12.00 = **\$ -**
total phosphate x \$ 16.00 = **\$ -**
pH **1** x \$ 5.00 = **\$ 5.00**
EPA 624 x \$ 50.00 = **\$ -**
EPA 625 x \$ 125.00 = **\$ -**
BTEX/MTBE x \$ 35.00 = **\$ -**
sulfide x \$ 19.00 = **\$ -**
oil & grease x \$ 20.00 = **\$ -**
total cyanide x \$ 18.00 = **\$ -**
hex chrome x \$ 20.00 = **\$ -**
fecal coliform x \$ 20.00 = **\$ -**
other x = **\$ -**

total per grab: \$ 5.00

Total Laboratory Grab Costs: \$ 5.00

Total Grab Sample Costs: \$ 5.00

Total Analytical Permit Costs: \$ 167.68

Permit No: Example 4

Company: Silver User - photoprocessor

Facility Address:
City, State, Zip

Permit Fee: \$ 400.00
Analytical Fee: \$ 220.35
Amount Due: \$ 620.35

Composite Samples:

IPP Requirements: man hours = **0.0** x \$ 64.34 = \$ -
sampler days = **0.0** x \$ 35.00 = \$ -
vehicle hours = **0.0** x \$ 4.11 = \$ -

Total IPP Composite Costs: \$ -

Laboratory Analysis: (each composite)
metals x \$ 5.00 = \$ -
TSS x \$ 7.00 = \$ -
BOD x \$ 12.00 = \$ -
total phosphorus x \$ 12.00 = \$ -
pH x \$ 16.00 = \$ -
EPA 625 x \$ 50.00 = \$ -
sulfide x \$ 35.00 = \$ -
oil & grease x \$ 19.00 = \$ -
hex chrome x \$ 18.00 = \$ -
fecal coliform x \$ 20.00 = \$ -
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 \$ 4.11 = \$ **12.33**

Total IPP Grab Costs: \$ 205.35

Laboratory Analysis: (each grab)
metals **1** x \$ 5.00 = \$ **5.00**
TSS x \$ 7.00 = \$ -
BOD x \$ 12.00 = \$ -
total phosphate x \$ 16.00 = \$ -
pH x \$ 5.00 = \$ -
EPA 624 x \$ 50.00 = \$ -
EPA 625 x \$ 125.00 = \$ -
BTEX/MTBE x \$ 35.00 = \$ -
sulfide x \$ 19.00 = \$ -
oil & grease x \$ 20.00 = \$ -
total cyanide x \$ 18.00 = \$ -
hex chrome x \$ 20.00 = \$ -
fecal coliform x \$ 20.00 = \$ -
other x = \$ -

total per grab: \$ 5.00

Total Laboratory Grab Costs: \$ 15.00

Total Grab Sample Costs: \$ 220.35

Total Analytical Permit Costs: \$ 220.35

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: September 05, 2019

TO: Molly Clarin
Fiscal Services Manager

FROM: Arden Postma, P.E.
Hydraulic Engineer

**SUBJECT: 2019 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>2019 Rate</u>	<u>2020 Rate</u>	<u>% Change</u>
8"-10"	\$4.43/ft	\$4.37/ft	-1.35%
8"-12"	\$9.05/ft	\$9.12/ft	0.77%
8"-15"	\$17.51/ft	\$17.55/ft	0.23%
10"-12"	\$4.62/ft	\$4.75/ft	2.81%
10"-15"	\$13.08/ft	\$13.18/ft	0.76%
12"-15"	\$8.46/ft	\$8.43/ft	-0.35%

These rates have been determined in accordance with the Sewer Disposal System Rules and Regulations, and are approved for use from January 1, 2020 through December 31, 2020. 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, 2019:

UAB Partners	Sq. Miles of USD by CC	Percent
Grand Rapids	45.36	37.169%
Walker	20.94	17.157%
Kentwood	14.37	11.774%
Cascade	16.81	13.771%
Grand Rapids Township	8.14	6.666%
Tallmadge Township	2.45	2.007%
Wright Township	0.89	0.729%
East Grand Rapids	3.37	2.761%
Ada	7.22	5.918%
Caledonia Township	2.50	2.048%
Total	122.05	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)	\$ 68,171	12.50%
City & Customer Community Circuit Breaker (CCCCB)	477,194	87.50%
Total	<u>\$ 545,365</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	\$ 477,194	100.00%
Less: Amount Applied in Current Rate Study	(278,102)	-58.28%
Total CCCCCB Revenue Credit- Next Year's Rate Study	<u>\$ 199,092</u>	<u>41.72%</u>

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MEMORANDUM

CITY OF GRAND RAPIDS

DATE: October 28, 2019

TO: Molly J. Clarin
Fiscal Services Manager

FROM: Charles R. Schroeder, PE
Acting Utilities Director

SUBJECT: 2019 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 \$73.73 which is the actual cost to the system for the additional flow.

CS

**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 ¹	Estimated annual claims cost
System Retail Customers	75,342	Total retail customers ²
Grand Rapids Retail Customers	<u>58,424</u>	Total retail customers in Grand Rapids ²
Annual Cost	\$1.99 /yr/cust.	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	21,796 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	\$373 /MG	Unit conveyance cost ³
Treatment	<u>\$1,038 /MG</u>	Unit treatment cost ³
Conveyance & Treatment	\$1,411 /MG	
Annual Cost	\$92.56 /yr/cust.	Annual cost for a connected FD

3. Actual MDNRE penalties for SSO's

Penalties for SSO

Grand Rapids Customers	58,424	
Penalties	\$25,000	Per occurrence
Potential SSOs	0 /year	Occurrences
Annual cost	<u>0</u> \$/year	
	\$0.00 /yr/cust.	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 ⁵
FDD Equivalents	25,598 FDD	FDDs needed to correct backup problems
Total Cost	\$45,769,224	Annualized Conveyance and Storage Costs
Grand Rapids Customers	<u>58,424</u>	Customers in Grand Rapids
Cost Per single Family Home	\$783.40 \$/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 ⁴
Total	\$400,000 /year	
Customers	<u>58,424</u>	In Grand Rapids
	\$6.85 \$/yr/cust.	

Annual Cost Summary

1. Avoided Claims	\$1.99	
2. Avoided Treatment	\$92.56	
3. Actual MDNRE Penalties for SSOs	\$0.00	
4. Avoided Future Projects	\$783.40	
5. Administration	<u>\$6.85</u>	
TOTAL	\$884.80 \$/yr/cust.	
	\$73.73 /month/cust.	Monthly fee for not disconnecting

Notes:

- ¹ Sinking fund annual budget
- ² Customer numbers per 2019 Rate Study
- ³ Value for sewer maintenance and WRRF costs from 2019 rate study.
- ⁴ Estimated staff rate with benefits
- ⁵ Total cost per FDD amortized over 20 years with 2.5% interest rate

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

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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 12, 2019

TO: Mark Washington, City Manager

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

FROM: Molly J. Clarin
Fiscal Services Manager

SUBJECT: **2019 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 43rd 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 2020. Water Supply System revenue requirements increased by \$1,099,939 or 2.46% more than revenues generated by existing rates and charges. Sewage Disposal System revenue requirements increased by \$1,920,412 or 3.49% more than revenues generated by existing rates and charges.

Asset management continues to be the top priority for both Systems and expenses related to maintenance on long-term capital assets was a major driver for rate increases. In addition, both systems are participating in the movement to smart meters through the Advanced Meter Program ("AMI"), currently funded through operations. Each system also experienced significant electricity cost savings, and an increase in three-year average of billed volume, moderating the rate increase.

Outside of the long-term maintenance expenses recognized and AMI, the main driver of the rate increase for the Sewer System is from preloading return on investment and depreciation expenses from the Biodigestion projects. While these projects included in the Biodigestion system would not affect the 2019 Rate Study and 2020 rates because

the project components are not yet in operation, the Rate Study methodology does allow for adjustment to the revenue requirement to mitigate predicted rate impacts on rate payers. During the October 17, 2019, Utility Advisory Board Meeting, it was determined that preloading some of the costs which would contribute to increasing 2020 rates would help to temper the expected 2021 rate increase. Placing \$30 Million worth of assets into the rate base was selected as appropriate for mitigating the 2021 rate impact.

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 \$120,486 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 2019 rate study was \$642,684 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 2019 water and sewer rates have been made available to the Utility Advisory Board partners and other customer communities on November 8, 2019. 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 resolution for the 2020 Water and Sewer rates by the City Commission is scheduled for Tuesday, December 17, 2019.

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 12, 2019 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 FY2021 budget planning process.

CITY OF GRAND RAPIDS, MICHIGAN
2019 PRELIMINARY WATER/SEWER RATE STUDY
SUMMARY OF REVENUE REQUIREMENT CHANGES
FOR RATES EFFECTIVE JANUARY 1, 2020

	<u>WATER (1)</u>		<u>SEWER (1)</u>	
	<u>AMOUNT</u>	<u>PERCENT</u>	<u>AMOUNT</u>	<u>PERCENT</u>
GRAND RAPIDS	\$ 859,431	3.28%	\$ 1,143,135	3.03%
WALKER	115,717	3.37%	188,979	3.99%
KENTWOOD	145,729	3.30%	172,433	3.99%
CASCADE TWP	24,176	0.63%	100,300	3.99%
GRAND RAPIDS TWP	82,352	3.42%	102,135	3.99%
TALLMADGE TWP	(28,207)	-11.73%	(45,081)	-9.25%
WRIGHT TWP	N/A	N/A	11,268	3.99%
EAST GRAND RAPIDS	(14,648)	-1.77%	98,137	11.94%
ADA TWP	10,696	0.83%	130,167	10.31%
OTTAWA COUNTY	(95,305)	-4.66%	NA	NA
GAINES TWP	N/A	N/A	542	0.26%
CALEDONIA TWP	N/A	N/A	18,397	12.77%
SYSTEM	\$ 1,099,939	2.46%	\$ 1,920,412	3.49%

(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)

	<u>WATER</u>		<u>SEWER</u>	
	<u>AMOUNT</u>	<u>PERCENT</u>	<u>AMOUNT</u>	<u>PERCENT</u>
SYSTEM REVENUE REQUIREMENT	\$ 45,748,236	2.46%	\$ 56,969,417	3.49%
ADD: CCCCB RELIEF	366,203	0.82%	276,482	0.50%
SYSTEM CHANGE- WITHOUT RELIEF	<u>\$ 46,114,439</u>	<u>3.28%</u>	<u>\$ 57,245,899</u>	<u>3.99%</u>

**CITY OF GRAND RAPIDS, MICHIGAN
2019 PRELIMINARY WATER/SEWER RATE STUDY
WATER & SEWER RATES FOR GRAND RAPIDS & RETAIL CUSTOMER COMMUNITIES
EFFECTIVE JANUARY 1, 2020**

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)		\$ 2.04	\$ 1.76	\$ 1.63	\$ 2.43	\$ 1.99	\$ 2.98	NA
MONTHLY SERVICE CHARGE BY METER SIZE								
3/4" & Less	A	\$ 11.40	\$ 13.63	\$ 15.60	\$ 23.31	\$ 17.09	\$ 4.50	NA
1"	B	\$ 17.16	\$ 21.13	\$ 24.63	\$ 38.34	\$ 27.28	\$ 4.90	NA
1-1/4"	C	\$ 24.57	\$ 30.77	\$ 36.24	\$ 57.66	\$ 40.38	\$ 5.41	NA
1-1/2"	D	\$ 33.63	\$ 42.55	\$ 50.43	\$ 81.27	\$ 56.39	\$ 6.03	NA
2"	E	\$ 56.68	\$ 72.54	\$ 86.55	\$ 141.38	\$ 97.15	\$ 7.62	NA
3"	F	\$ 122.55	\$ 158.23	\$ 189.75	\$ 313.11	\$ 213.59	\$ 12.15	NA
4"	G	\$ 214.76	\$ 278.19	\$ 334.23	\$ 553.54	\$ 376.61	\$ 18.50	NA
6" & Over	H	\$ 478.23	\$ 620.95	\$ 747.03	\$ 1,240.47	\$ 842.39	\$ 36.63	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)		\$ 3.58	\$ 2.64	\$ 2.73	\$ 2.77	\$ 2.47	\$ 8.96	NA
REU Charge (Monthly) *		NA	NA	NA	NA	NA	NA	\$ 57.92
MONTHLY SERVICE CHARGE BY METER SIZE								
3/4" & Less	A	\$ 18.06	\$ 29.61	\$ 8.19	\$ 33.75	\$ 29.20	\$ 28.86	NA
1"	B	\$ 29.11	\$ 49.65	\$ 11.57	\$ 57.01	\$ 48.92	\$ 48.31	NA
1-1/4"	C	\$ 43.32	\$ 75.41	\$ 15.91	\$ 86.91	\$ 74.27	\$ 73.32	NA
1-1/2"	D	\$ 60.69	\$ 106.89	\$ 21.21	\$ 123.45	\$ 105.25	\$ 103.89	NA
2"	E	\$ 104.90	\$ 187.03	\$ 34.71	\$ 216.47	\$ 184.12	\$ 181.70	NA
3"	F	\$ 231.21	\$ 416.01	\$ 73.29	\$ 482.25	\$ 409.45	\$ 404.01	NA
4"	G	\$ 408.04	\$ 736.58	\$ 127.30	\$ 854.34	\$ 724.92	\$ 715.24	NA
6" & Over	H	\$ 913.29	\$ 1,652.49	\$ 281.61	\$ 1,917.45	\$ 1,626.25	\$ 1,604.49	NA

* REU - Residential Equivalent Unit (Wright Township Only)

FIRE PROTECTION RATES- ALL GOVERNMENTAL UNITS

6"	H	\$ 19.60	10"	J	\$ 54.50
8"	I	\$ 34.79	12"	K	\$ 78.42

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

**CITY OF GRAND RAPIDS, MICHIGAN
2019 PRELIMINARY WATER/SEWER RATE STUDY
IMPACT OF RATE ADJUSTMENTS ON WHOLESALE CUSTOMER COMMUNITIES
EFFECTIVE JANUARY 1, 2020**

	<u>2019</u>	<u>2020</u>	<u>PERCENTAGE CHANGE</u>
EAST GRAND RAPIDS			
WATER - SERVICE (MONTHLY)	\$17,209.00	\$17,849.00	3.72%
- COMMODITY (100 CF)	\$1.11	\$1.07	-3.60%
SEWER - SERVICE (MONTHLY)	\$2,243.00	\$2,213.00	-1.34%
- COMMODITY (MG)	\$1,840.00	\$2,068.00	12.39%
ADA TWP			
WATER - SERVICE	\$42,811.00	\$45,244.00	5.68%
- COMMODITY	\$1.25	\$1.22	-2.40%
SEWER - SERVICE	\$46,008.00	\$47,747.00	3.78%
- COMMODITY	\$2,358.00	\$2,721.00	15.39%
OTTAWA COUNTY			
WATER - SERVICE	\$445.00	\$0.00	-100.00%
- COMMODITY	\$1.19	\$1.14	-4.20%
GAINES TWP			
SEWER - SERVICE	\$1,605.00	\$1,631.00	1.62%
- COMMODITY	\$1,668.00	\$1,670.00	0.12%
CALEDONIA TWP			
SEWER - SERVICE	\$752.00	\$739.00	-1.73%
- COMMODITY	\$4,497.00	\$5,115.00	13.74%

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

CITY OF GRAND RAPIDS, MICHIGAN
2019 PRELIMINARY WATER/SEWER RATE STUDY
IMPACT OF RATE ADJUSTMENTS ON DOMESTIC USERS
BY CUSTOMER COMMUNITY *
FOR RATES EFFECTIVE JANUARY 1, 2020

	<u>APPROXIMATE QUARTERLY BILL</u>		<u>CHANGE</u>	
	<u>2019</u>	<u>2020</u>	<u>DOLLARS</u>	<u>PERCENT</u>
GRAND RAPIDS				
WATER	\$ 86.28	\$ 89.28	\$ 3.00	3.48%
SEWER	119.04	122.20	3.16	2.65%
	<u>\$ 205.32</u>	<u>\$ 211.48</u>	<u>\$ 6.16</u>	3.00%
BASE RATIO	1.00	1.00		
WALKER				
WATER	\$ 85.32	\$ 88.41	\$ 3.09	3.62%
SEWER	133.55	138.99	5.44	4.07%
	<u>\$ 218.87</u>	<u>\$ 227.40</u>	<u>\$ 8.53</u>	3.90%
RATIO TO GR	1.07	1.08		
KENTWOOD				
WATER	\$ 87.48	\$ 90.81	\$ 3.33	3.81%
SEWER	73.22	76.44	3.22	4.40%
	<u>\$ 160.70</u>	<u>\$ 167.25</u>	<u>\$ 6.55</u>	4.08%
RATIO TO GR	0.78	0.79		
CASCADE TWP				
WATER	\$ 134.46	\$ 135.54	\$ 1.08	0.80%
SEWER	147.89	153.88	5.99	4.05%
	<u>\$ 282.35</u>	<u>\$ 289.42</u>	<u>\$ 7.07</u>	2.50%
RATIO TO GR	1.38	1.37		
GRAND RAPIDS TWP				
WATER	\$ 101.40	\$ 105.00	\$ 3.60	3.55%
SEWER	129.28	134.53	5.25	4.06%
	<u>\$ 230.68</u>	<u>\$ 239.53</u>	<u>\$ 8.85</u>	3.84%
RATIO TO GR	1.12	1.13		
TALLMADGE TWP				
WATER	\$ 110.61	\$ 93.96	\$ (16.65)	-15.05%
SEWER	282.06	256.82	(25.24)	-8.95%
	<u>\$ 392.67</u>	<u>\$ 350.78</u>	<u>\$ (41.89)</u>	-10.67%
RATIO TO GR	1.91	1.66		

* 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

WRIGHT TWP-				
SEWER (No. of REU 1.00)	<u>\$ 167.10</u>	<u>\$ 173.76</u>	<u>\$ 6.66</u>	3.99%

**CITY OF GRAND RAPIDS, MICHIGAN
2019 PRELIMINARY WATER/SEWER RATE STUDY
IMPACT OF RATE ADJUSTMENTS ON COMMERCIAL USERS
BY CUSTOMER COMMUNITY
FOR RATES EFFECTIVE JANUARY 1, 2020**

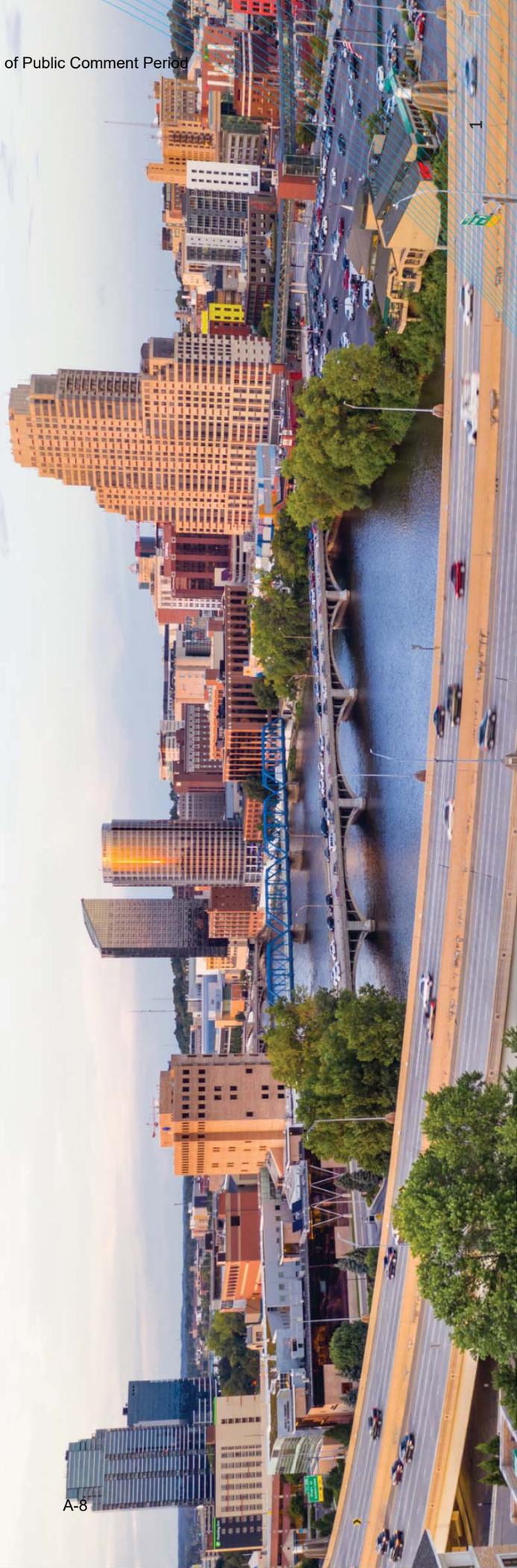
	<u>APPROXIMATE QUARTERLY BILL</u>		<u>CHANGE</u>	
	<u>2019</u>	<u>2020</u>	<u>DOLLARS</u>	<u>PERCENT</u>
GRAND RAPIDS				
WATER	\$ 479.37	\$ 494.16	\$ 14.79	3.09%
SEWER	790.11	839.13	49.02	6.20%
	<u>\$ 1,269.48</u>	<u>\$ 1,333.29</u>	<u>\$ 63.81</u>	5.03%
BASE RATIO	1.00	1.00		
WALKER				
WATER	\$ 430.34	\$ 445.31	\$ 14.97	3.48%
SEWER	676.71	703.35	26.64	3.94%
	<u>\$ 1,107.05</u>	<u>\$ 1,148.66</u>	<u>\$ 41.61</u>	3.76%
RATIO TO GR	0.87	0.86		
KENTWOOD				
WATER	\$ 413.90	\$ 427.60	\$ 13.70	3.31%
SEWER	585.30	608.01	22.71	3.88%
	<u>\$ 999.20</u>	<u>\$ 1,035.61</u>	<u>\$ 36.41</u>	3.64%
RATIO TO GR	0.79	0.78		
CASCADE TWP				
WATER	\$ 637.69	\$ 642.33	\$ 4.64	0.73%
SEWER	723.33	752.73	29.40	4.06%
	<u>\$ 1,361.02</u>	<u>\$ 1,395.06</u>	<u>\$ 34.04</u>	2.50%
RATIO TO GR	1.07	1.05		
GRAND RAPIDS TWP				
WATER	\$ 496.11	\$ 513.67	\$ 17.56	3.54%
SEWER	640.92	665.46	24.54	3.83%
	<u>\$ 1,137.03</u>	<u>\$ 1,179.13</u>	<u>\$ 42.10</u>	3.70%
RATIO TO GR	0.90	0.88		
TALLMADGE TWP				
WATER	\$ 759.23	\$ 661.36	\$ (97.87)	-12.89%
SEWER	2,232.42	2,026.53	(205.89)	-9.22%
	<u>\$ 2,991.65</u>	<u>\$ 2,687.89</u>	<u>\$ (303.76)</u>	-10.15%
RATIO TO GR	2.36	2.02		

* THE COMPARISONS ABOVE ARE BASED ON SYSTEM AVERAGE COMMERCIAL CUSTOMER
 QUARTERLY CONSUMPTION OF : WATER- 217.00 UNITS OR 162,316 GALLONS
 SEWER - 210.00 UNITS OR 157,080 GALLONS
 NO. OF MONTHS: 3

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

WRIGHT TWP				
SEWER (No. of REU 1.00)	<u>\$ 167.10</u>	<u>\$ 173.76</u>	<u>\$ 6.66</u>	3.99%

Grand Rapids Water & Sewer Systems Preliminary Rate Study 2019





Historical Rate Changes

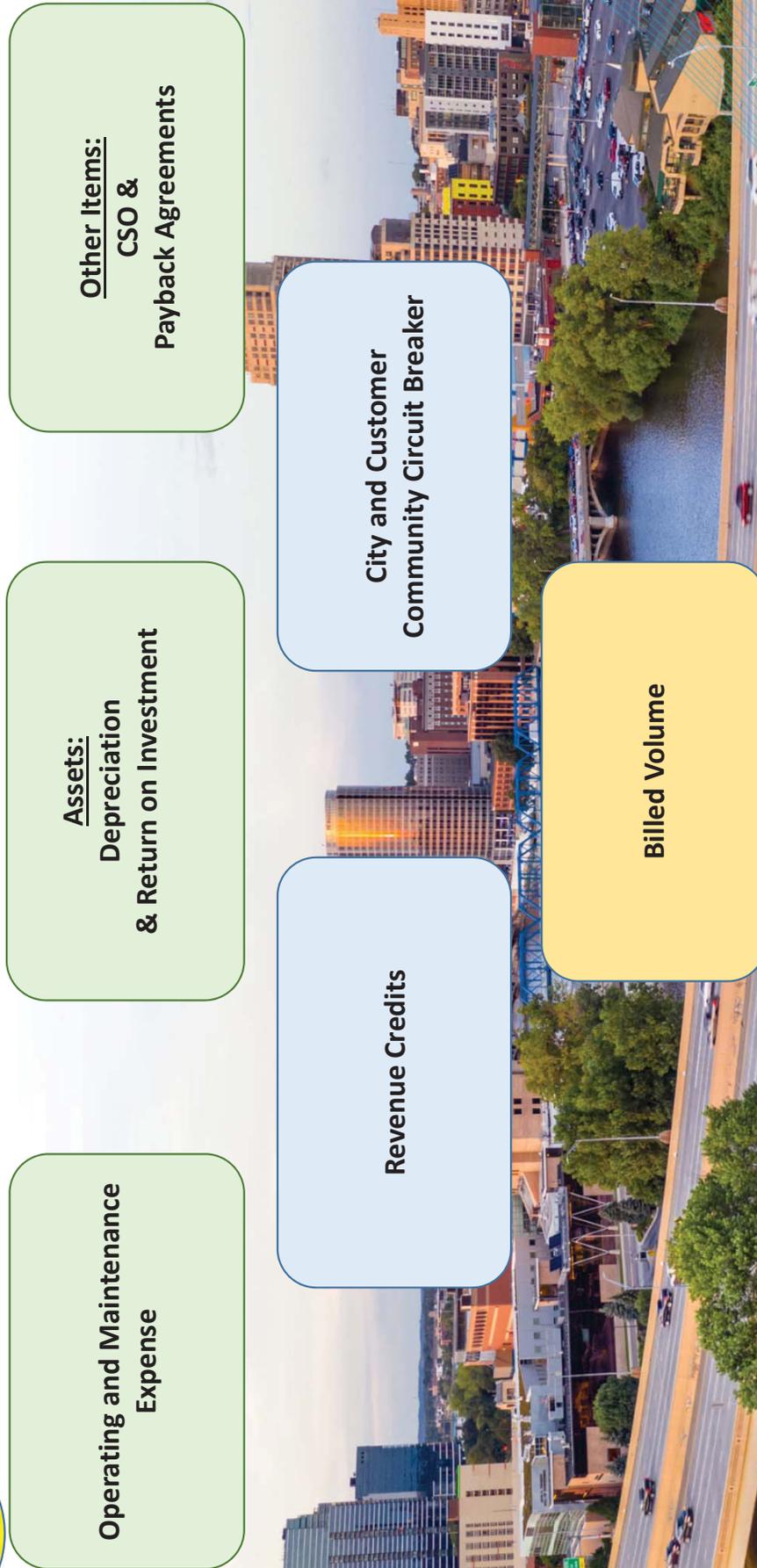
Rate Study Year	Water Supply System			Sewage Disposal System		
	Revenue Requirements	% change in RR over prev year	% gross rate incr (decr) **	Revenue Requirements	% change in RR over prev year	% gross rate incr (decr) **
2004	\$ 35,193,350	0.13%	4.41%	\$ 32,212,584	5.28%	9.03%
2005	37,329,089	6.07%	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	6.51%	2.71%	54,611,300	8.36%	3.28%
2019*	45,748,236	6.82%	2.46%	56,969,417	8.89%	3.49%
AVG	40,758,982	2.13%	2.07%	47,439,285	4.60%	5.26%

* Revenue Requirements per the 2019 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.



Building Blocks of the Revenue Requirement

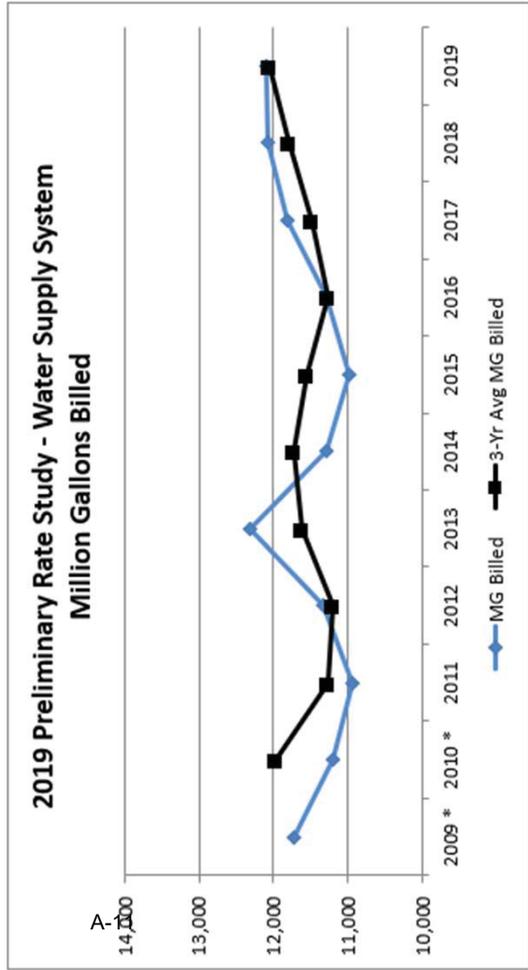




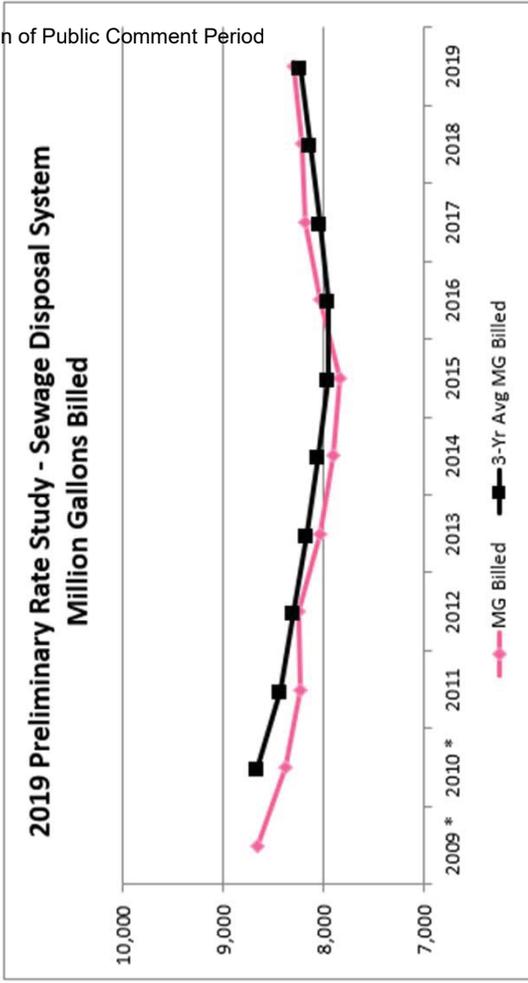
Billed Volume Average – Revenue Expectation

- 2019 Sewer Volume up 1.01% from 2018
- 3-Yr Avg Sewer Volume up 1.04%

- 2019 Water volume up 0.26% over 2018
- 3-Yr Avg Water volume up by 2.22%



* 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.



Rate Impact Factors - Water

Rate Drivers	% Impact
Increases:	
O&M – Construction in Progress Advanced Meter Program + other supplies Staffing + Benefits Electricity Costs Savings	2.11%
Integrated Connection Fees	0.27%
Assets – ROI and Depreciation	0.26%
Circuit Breaker Credit	0.04%
Decreases:	
Revenue Credits	(0.22%)
Proposed Rate Increase	2.46%



Rate Impact Factors - Sewer

Rate Drivers	% Impact
Increases:	
O&M – Construction in Progress Staffing + Benefits Advanced Meter Program Contractual Services/Temp Services Electricity Costs Savings	1.61%
Assets – ROI and Depreciation (\$30M Biodigester Preload)	1.72%
Revenue Credits	0.36%
Circuit Breaker Credit	0.05%
Decreases:	
Capital Investment Reimbursement (Payback Agreement)	(0.16%)
Integrated Revenues	(0.05%)
CSO Debt Service Requirement (GR Only)	(0.04%)
Proposed Rate Increase	3.49%



Biodigester Project Update

Changes in project

- Market conditions
 - RINS market price drop
 - Additional firm pricing
 - Timing of project completion and generated revenue
- Additions to project scope

Phasing of rates

- 2020 Sewer rates increase of \$3.16 per quarter or \$13 per year
- 2021 Sewer rates will be determined based on project timing and phase-in of revenues
- Rates can be mitigated by proven operation cost control efforts
- The biodigestion system will produce rate savings in future years

Project Budget	
Biodigester	\$57,286,593
RNG	14,821,200
Phosphorus	7,604,700
Consumers	995,000
Engineering	4,619,590
Total	\$85,327,083

What has not changed

- Renewable energy and sustainability benefits remain strong
- Less costly than alternatives and those alternatives did not produce renewable energy and sustainability benefits

Moving forward

- Added capacity to the project team will now include new city engineer
- Complete bidding in mid-November (Phosphorus)



Circuit Breaker Calculation

	Water/Sewer
City & Customer Community Circuit Breaker (CCCCB): Penalty Revenue (87.5%)*	\$843,397
Individual Circuit Breaker (ICB):	
Penalty Revenue (12.5%)	120,486
Other Non-op Revenue	80,000
Total ICB	\$200,486
Total Circuit Breaker Funds	\$1,043,883
*CCCCB funds used in 2019 Rate Study	\$642,684



Prelim 2020 Rate Impact by Community

	WATER (1)		SEWER (1)	
	AMOUNT	PERCENT	AMOUNT	PERCENT
GRAND RAPIDS	\$ 859,431	3.28%	\$ 1,143,135	3.03%
WALKER	115,717	3.37%	188,979	3.99%
KENTWOOD	145,729	3.30%	172,433	3.99%
CASCADE TWP	24,176	0.63%	100,300	3.99%
GRAND RAPIDS TWP	82,352	3.42%	102,135	3.99%
TALLMADGE TWP	(28,207)	-11.73%	(45,081)	-9.25%
WRIGHT TWP	N/A	N/A	11,268	3.99%
EAST GRAND RAPIDS	(14,648)	-1.77%	98,137	11.94%
ADA TWP	10,696	0.83%	130,167	10.31%
OTTAWA COUNTY	(95,305)	-4.66%	NA	NA
GAINES TWP	N/A	N/A	542	0.26%
CALEDONIA TWP	N/A	N/A	18,397	12.77%
SYSTEM	\$ 1,099,939	2.46%	\$ 1,920,412	3.49%

(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	\$ 45,748,236	2.46%	\$ 56,969,417	3.49%
ADD: CCCCB RELIEF	366,203	0.82%	276,482	0.50%
SYSTEM CHANGE- WITHOUT RELIEF	\$ 46,114,439	3.28%	\$ 57,245,899	3.99%



Prelim 2020 Quarterly Bill by Community

	APPROXIMATE QUARTERLY BILL		CHANGE	
	2019	2020	DOLLARS	PERCENT
GRAND RAPIDS				
WATER	\$ 86.28	\$ 89.28	\$ 3.00	3.48%
SEWER	119.04	122.20	3.16	2.65%
	<u>\$ 205.32</u>	<u>\$ 211.48</u>	<u>\$ 6.16</u>	<u>3.00%</u>
BASE RATIO	1.00	1.00		
WALKER				
WATER	\$ 85.32	\$ 88.41	\$ 3.09	3.62%
SEWER	133.55	138.99	5.44	4.07%
	<u>\$ 218.87</u>	<u>\$ 227.40</u>	<u>\$ 8.53</u>	<u>3.90%</u>
RATIO TO GR	1.07	1.08		
KENTWOOD				
WATER	\$ 87.48	\$ 90.81	\$ 3.33	3.81%
SEWER	73.22	76.44	3.22	4.40%
	<u>\$ 160.70</u>	<u>\$ 167.25</u>	<u>\$ 6.55</u>	<u>4.08%</u>
RATIO TO GR	0.78	0.79		
CASCADE TWP				
WATER	\$ 134.46	\$ 135.54	\$ 1.08	0.80%
SEWER	147.89	153.88	5.99	4.05%
	<u>\$ 282.35</u>	<u>\$ 289.42</u>	<u>\$ 7.07</u>	<u>2.50%</u>
RATIO TO GR	1.38	1.37		
GRAND RAPIDS TWP				
WATER	\$ 101.40	\$ 105.00	\$ 3.60	3.55%
SEWER	129.28	134.53	5.25	4.06%
	<u>\$ 230.68</u>	<u>\$ 239.53</u>	<u>\$ 8.85</u>	<u>3.84%</u>
RATIO TO GR	1.12	1.13		
TALLMADGE TWP				
WATER	\$ 110.61	\$ 93.96	\$ (16.65)	-15.05%
SEWER	282.06	256.82	(25.24)	-8.95%
	<u>\$ 392.67</u>	<u>\$ 350.78</u>	<u>\$ (41.89)</u>	<u>-10.67%</u>
RATIO TO GR	1.91	1.66		

* 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



Next Steps

- **November 8th**: Prelim Rate Study available & 30-day review and comment period open for partner communities
- **November 12th**: Rate Study Presentation to City of Grand Rapids Commission & Initiation of 20 day Public Comment Period
- **November 14th**: Rate Study Presentation to Utility Advisory Board
- **Late November/Early December**: Meetings with Partner Communities
- **December 17th**: Approval of the 2020 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>

STATE OF MICHIGAN)

County of Kent
and County of Ottawa

ss. Shawn Sutton

Being duly sworn deposes and say he/she is Principal Clerk of



THE GRAND RAPIDS PRESS
DAILY EDITION

a newspaper published and circulated in the County of Kent and the County of Ottawa and otherwise qualified according to Supreme Court Rule; and that the annexed notice, taken from said paper, has been duly published in said paper on the following day(day(s))

November 12 A.D. 20 19

Sworn to and subscribed before me this 12th day of November 2019

Janice M. DeGraaf
JANICE M. DEGRAAF
NOTARY PUBLIC, STATE OF MI
COUNTY OF KENT
MY COMMISSION EXPIRES Oct 3, 2020
ACTING IN COUNTY OF Kent

CITY OF GRAND RAPIDS

WATER/SEWER RATES AND CHARGES FOR 2019 NOW AVAILABLE FOR PUBLIC COMMENT

The City of Grand Rapids has completed the "Preliminary Water/Sewer 2019 Rate Study" report, which is the basis for recommending water and Sewer rates to become effective January 1, 2020, for all residential, commercial, and industrial users. That report, which also includes information on the Individual Circuit Breaker Program, the program aimed to help retail users requiring assistance in payment of their water/sewer bills, is available for public inspection in the City Clerk's Office, 2nd floor of City Hall, 300 Monroe NW, Grand Rapids, MI 49503 between 8:00 a.m. and 5:00 p.m. weekdays and can also be reviewed at:
<https://www.grandrapidsmi.gov/Government/Departments/Water-System/Water-and-Sewer-Rate-Study>

Opportunity for public commentary runs through December 2nd. You may submit comments to the City Clerk's Office or by sending an email to info@grcity.us.

The Grand Rapids City Commission is scheduled to consider approval on the rates on Tuesday, December 17, 2019.

9399740-01

89482 Result: Adopted.
Mover: Kelly. Supporter: Jones.

WHEREAS:

1. The Water/Sewer rate studies have been undertaken and completed for the years 1976 through 2018; and
2. The 2019 Water/Sewer rate review has been completed using the same general methodology as the 1976 through 2018 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	\$360
1 inch	\$370
1½ inch	\$370

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

Meter Size	PRC Fee
¾ inch or less	\$700
1 inch	\$910
1½ inch	\$1,220
2 inch	\$1,680
3 inch	\$2,100
4 inch	\$3,025
6 inch	\$4,270

- 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 – T2	\$750
2 inch – T2	\$880
3 inch – T2	\$1,100
4 inch – T2	At cost
6 inch – T2	At cost
1½ inch – C2	\$1,200
2 inch – C2	\$1,385
3 inch – C2	\$1,755
4 inch – C2	At cost
6 inch – C2	At cost

- iii. Fire Protection Review Fee

All Fire Service Sizes	\$710
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- iv. Commercial Plan Assessment Fee (for instances where there is an established connection or property has been previously reviewed)

All Sizes	\$125
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- c. Commodity rates within the City of Grand Rapids

Domestic	\$2.04 per 100 cubic feet
Commercial	\$2.04 per 100 cubic feet
Industrial	\$2.04 per 100 cubic feet

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

Size of Meter	Charge
¾ inch or less	\$11.40
1 inch	\$17.16
1¼ inch	\$24.57

1½ inch	\$33.63
2 inches	\$56.68
3 inches	\$122.55
4 inches	\$214.76
6 inches or larger	\$478.23

e. Fire protection charge

Size of Pipe	Monthly	Quarterly
6 inches	\$19.60	\$58.80
8 inches	\$34.79	\$104.37
10 inches	\$54.50	\$163.50
12 inches	\$78.42	\$235.26

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	\$2,900	\$3,300	\$3,500	\$4,100	\$4,900
Cost for 1½ inch Water Service	\$3,800	\$4,300	\$4,500	\$5,100	\$6,000
Cost for 2 inches Water Service	\$4,400	\$4,900	\$5,200	\$6,000	\$7,000

- 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 and Non-account holder - \$500 refundable deposit + \$25/week + metered volume (commodity charges at City of Grand Rapids rate)
- k. Hydrant connection assistance requests - \$100 service fee
- 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	\$70

need meter install)	
---------------------	--

- o. Meter Replacement (Non-System Planned/Scheduled Replacement)
(In addition to Meter Installation Fee)

Meter Size	Fee
¾ inch or less	\$210
1 inch	\$250
T2 Omni Meter	Fee
1½ inch	\$750
2 inches	\$880
3 inches	\$1,100
4 inches or larger	At cost
C2 Omni Meter	Fee
1½ inch	\$1,200
2 inches	\$1,385
3 inches	\$1,755
4 inches or larger	At cost

- p. Final or actual meter reading - \$55
- q. Meter testing fee – paid by customer if meter is accurate, no charge if meter is faulty (In addition to Service On/Off Requests Fee)

Meter Size	Fee
¾ inch or less	\$150
1 inch	\$150
1½ inch	\$200
2 inches	\$350
3 inches	\$400
4 inches or larger	At cost

- r. Meter interface unit replacement - \$155
- s. Security deposit - \$500
- t. Street opening permit - \$300
- u. Water inspection permit (within City) - \$75
- v. Water inspection permit (outside City) - \$90
- w. Sanitary Service line inspection permit (within City) - \$75
- x. Sanitary Service line inspection permit (outside City) - \$90
- y. Storm Service line inspection permit (within City) - \$75

- z. Storm Service line inspection permit (outside City) - \$90
- aa. Footing drain lateral inspection permit (within City) - \$75
- bb. Footing drain lateral inspection permit (outside City) - \$90
- cc. Sewer lateral service demolition/cap off inspection fee (within City) - \$75
- dd. Sewer lateral service demolition/cap off inspection fee (outside City) - \$90
- ee. Plumbing service re-inspection fee - \$75
- 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. Administrative/Research fee – Review or processing of account for non-payment, returned payment, shut-off, posting of property, and/or backflow non-compliance. Document creation for account of location information, FOIA request may still be required - \$55
- kk. Late payment penalty – 10% of net
- ll. Missed appointment fee - \$50
- mm. 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
- nn. 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 and doubling of penalties for each subsequent violation
- oo. Failure to return or return of damaged beyond repair / repairable hydrant connection equipment – Cost + 10%
- pp. Repair/replace damage to fire hydrant – Cost + 10%
- qq. Permit infractions/violations – \$100 plus double the commodity rate for estimated volume and doubling of penalties for each subsequent violation
- rr. Returned check charge - \$30
- ss. Unauthorized service tap of water or sewer main - \$500 plus double commodity rate for estimated volume and doubling of penalties for each subsequent infraction and doubling of penalties for each subsequent violation
- tt. 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

uu. Watermain oversizing rates

8 – 12 inches	\$27.47 per lineal foot
12 – 16 inches	\$33.90 per lineal foot
8 – 16 inches	\$61.37 per lineal foot

vv. Circuit breaker allocation

Individual Circuit Breaker (ICB)	\$200,486
City and Customer Community Circuit Breaker (CCCCB)	\$642,685

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	\$141

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	\$360
1 inch	\$370
1½ inch	\$370

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

Meter Size	PRC Fee
¾ inch or less	\$700
1 inch	\$910
1½ inch	\$1,220
2 inch	\$1,680
3 inch	\$2,100
4 inch	\$3,025
6 inch	\$4,270

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 – T2	\$750
2 inch – T2	\$880
3 inch – T2	\$1,100
4 inch – T2	At cost
6 inch – T2	At cost
1½ inch – C2	\$1,200
2 inch – C2	\$1,385
3 inch – C2	\$1,755
4 inch – C2	At cost
6 inch – C2	At cost

iii. Commercial Plan Assessment Fee (for instances where there is an established connection or property has been previously reviewed)

All Sizes	\$125
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c. Commodity rates within the City of Grand Rapids

Domestic	\$3.58 per 100 cubic feet
Commercial	\$3.58 per 100 cubic feet
Industrial	\$3.58 per 100 cubic feet

d. Monthly service charge within the City of Grand Rapids

Size of Meter	Charge
¾ inch or less	\$18.06
1 inch	\$29.11
1¼ inch	\$43.32
1½ inch	\$60.69
2 inches	\$104.90
3 inches	\$231.21
4 inches	\$408.04

6 inches or larger	\$913.29
e. Wastewater surcharges for industrial customers	
BOD	\$0.301
TSS	\$0.489
Phos	\$2.873
NH3	\$0.299
f. Concentrated waste credit	
BOD	\$0.115
Phos	\$5.770
NH3	\$0.042
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	\$5/each
TSS	\$7/each
BOD	\$12/each
COD	\$12/each
Total Phosphate	\$16/each

pH	\$5/each
EPA 624	\$50/each
EPA 625	\$125/each
BTEX/MTBE	\$35/each
Sulfide	\$19/each
Oil and Grease	\$20/each
Total Cyanide	\$18/each
Hexavalent Chromium	\$20/each
Fecal Coliform	\$20/each
Mercury	\$15/each
Ammonia	\$12/each
Pesticides and PCBs EPA 608	\$90/each
PCB's	\$45/each
Phenols	\$18/each
PFAS EPA 537 Modified (samples, duplicate and blank)	\$245/each
PFAS by LCMSMS (samples, duplicate and blank)	\$285/each
Labor	\$64.34/hour
Sampler	\$35/day
Vehicle	\$4.11/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	\$2,900	\$3,400	\$3,700	\$4,400	\$5,400

m. Sewer oversizing rates

Description	Amount (per lineal foot)
8 – 10 inches	\$4.37
8 – 12 inches	\$9.12

8 – 15 inches	\$17.55
10 – 12 inches	\$4.75
10 – 15 inches	\$13.18
12 – 15 inches	\$8.43

n. Footing drain disconnect opt out charge - \$73.73 per customer per month

3. That the above Water and Sewer rates, charges and fees are approved and shall be effective January 1, 2020.

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 17, 2019.



Joel H. Hondorp, City Clerk

**89481 Result: Adopted.
Mover: Kelly. Supporter: Jones.**

WHEREAS:

1. The Water/Sewer rate studies have been undertaken and completed for the years 1976 through 2018; and
2. The 2019 Water/Sewer Rate Review has been completed using the same general methodology as the 1976 through 2018 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, 2020; and
2. That the City Clerk 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 17, 2019.



Joel H. Hondorp, City Clerk

MEMORANDUM

CITY OF GRAND RAPIDS

DATE: December 17, 2019

TO: City of Grand Rapids Mayor and City Commissioners

FROM: Molly Eastman, Interim Chief Financial Officer
Jenessa Carter, Acting Utility Financial Officer

SUBJECT: 2019 Rate Study – City of Grand Rapids 20 Day Public Comment Period Comments and Answers

During the 2019 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 12, 2019, all public comments received will be reviewed by staff and considered as part of the FY2021 budget planning process.

Friday, November 8, 2019:

Email from Mr. Steven Myszka:

From: steven myszka <smyszka@att.net>
Sent: Friday, November 8, 2019 9:50 PM
To: City Manager <manager@grand-rapids.mi.us>
Subject: Biodigester

How did this work in Lowell? Do you think its a great idea to stick 58 million in tax dollars on an unproven method of disposal.

Who makes these decisions and is it an elected position?

Response:

From: Clarin, Molly
Sent: Tuesday, November 19, 2019 7:56 AM
To: smyszka@att.net
Cc: DeLong, Eric
Subject: FW: Biodigester
Attachments: UAB - Digestion 2019 Rate Study 10-30-2019.pdf; WRS19 Rate Study Presentation 11-11-19 FINAL.pptx
Importance: High

Dear Mr. Myszka,

Thank you for your interest in the 2019 Rate Study and the Biodigestion Project. The feedback we receive is important and I appreciate the opportunity to answer your questions.

I cannot comment directly on Lowell's Digester, but I can assure you that odor control and pretreatment have both been key elements in the design of the City's Biodigestion Project. Anaerobic Digestion has been used for over a century worldwide as an effective means to recover gas from waste management. Numerous anaerobic digesters are in operation throughout the United States. Our close neighbor, The City of Grandville has an anaerobic digester in operation today as well.

I have attached the communication Deputy City Manager, Eric DeLong, shared with the Utility Advisory Board Members and City Commission regarding the Biodigestion Project – History and Current State. I believe this communication is beneficial in understanding the project timeline. Please be assured that throughout the project, key decisions have been reviewed by the project team, the City administration staff, the Utility Advisory Board, and the Grand Rapids City Commission. City Staff has also reviewed the alternative – plant expansion and found that Biodigestion is the best, most cost effective solution.

Moving forward, new capacity has been added to the project team, including the new City Engineer, to supplement the team of dedicated and knowledgeable staff currently working toward accomplishing this goal.

Also attached is the power point presentation presented at Committee of the Whole as well as the link to the video of Committee of the Whole where the 2020 rates and the Biodigestion project were discussed: https://www.youtube.com/watch?v=c_138RccQU

Please let me know if you have additional questions. Thank you

Molly Clarin, Interim Chief Financial Officer

City of Grand Rapids,
Fiscal Services 300
Monroe Ave. NW
Grand Rapids, MI 49503

Email: mclarin@grcity.us
Direct Line: 616-456-3269

Tuesday, November 12, 2019 Commission:

In-person question from Mr. Robert Knapp during the November 12, 2019 Commission Public Comment:

Mr. Robert Knapp attended the City Commission meeting on the evening of November 12, 2019. During the public comment period, Mr. Knapp voiced several concerns and questions regarding the Biodigester. A question sheet was provided and is noted below:

- This proposal clearly contradicts previous rate hike estimates from earlier this year. What was the basis for that deduction? Why has it now all of a sudden changed so dramatically? What changed? City officials, have gone from less than 1% then to now 11% all within the same year?
- How could you possibly go from previous cost estimates of 30 million now up to 85.3 million. Why should these numbers be believed? Where is the line item details and assumptions behind these hokey numbers? Just how credible are these assumptions?
- Based on the press article – reasons for the changes are design changes (what changes and how much did they add?) and rising construction and material costs. (That is too general) What materials have seen increases and by how much?
- Engineering cost increases of 4.6 million and Consumers Energy increase of less than one million. That adds up to 5 million not 55 million!
- Renewable fuel prices (what) went from \$2.92 to .59 per gallon/Previously saved 4 Million now 3 Million. That is 80% reduction how can you still yield 3 million? What will future prices be?
- Why should city residents fund the cost of processing concentrated industrial waste which should be bore by those companies and not inner city residents who can lease afford increase.
- DeLong says “he is disappointed about the current state of the project.” Just what does this mean? He says “Long term it will save our sewer customer money.” What is the basis and detail behind this?
- What is the experience of any other communities that have a biodigester system? Have we met with them and checked into our assumptions?
- Until further valid information is obtained and audited with satisfactory backup data, it is much too soon to just ramrod thru these proposed increases to the customers.

Response:

From: Clarin, Molly
Sent: Tuesday, November 19, 2019 8:07 AM
To: babngink@yahoo.com
Cc: DeLong, Eric

Subject: Follow Up - Commission Question Regarding Biodigester Project
Attachments: UAB - Digestion 2019 Rate Study 10-30-2019.pdf; WRS19 Rate Study Presentation 11-11-19 FINAL.pptx

Dear Mr. Knapp,

I would like to thank you for your email in response to the Biodigestion Project. The feedback we receive is important and I appreciate the opportunity to answer your questions.

I have attached the communication Deputy City Manager, Eric DeLong shared with the Utility Advisory Board Members and the City Commission regarding the Biodigestion Project – History and Current State. I believe this communication answers many of the questions you have shared with us. Please be assured that at every step of the way, City Staff have reviewed the alternative – plant expansion and found that Biodigestion is the best, most cost effective solution.

Moving forward, new capacity has been added to the project team, including the new City Engineer, to supplement the team of dedicated and knowledgeable staff currently working toward accomplishing this goal.

Also attached is the power point presentation presented at Committee of the Whole as well as the link to the video of Committee of the Whole where the 2020 rates and the Biodigestion project were discussed: https://www.youtube.com/watch?v=c_138RccQU

Please let me know if you have

additional questions. Thank you

Molly Clarin, Interim Chief Financial Officer

City of Grand Rapids, Fiscal Services 300 Monroe Ave. NW
Grand Rapids, MI 49503

Email: mclarin@grcity.us
Direct Line: 616-456-3269

Follow-up:

On Tuesday, December 3rd, 2019 I talked with Mr. Knapp, a resident who we previously had sent an email to in response his comments made at City Commission meeting about the Sewer rates and Biodigester project concerns. He said he appreciated our email as well as the resources provided. He asked me to talk through the Biodigester project and the implications of the changes in costs and revenues. He asked if it was possible for Commission to table the rate increase until the City could provide more information to the Community. I stressed for the need to pass rates in order to support operations and enabling

the utility to have adequate cashflow to support capital investment. He seemed satisfied by the end of our call. He is a very engaged citizen and I wouldn't be surprised if he attends the Commission meeting on December 17th.

Wednesday, November 13, 2019:

Email from Mr. Robin Daning to Commissioner Kelly:

From: Robin Daning <robanddebdan@yahoo.com>
Sent: Wednesday, November 13, 2019 6:44 PM
To: Kelly, Ruth <rkelly@grand-rapids.mi.us>
Subject: Water & Sewer Rates

Commissioner Kelly,

Let's see, if I get this right.

In early 2017 we were told we would save \$60 million dollars by building a Biodigester rather than expand our waste water plant which would cost \$90 million dollars. We would also get the added benefit of selling the methane it would produce to defer the costs, four million dollars a year. Now on November 7th of this year, two days after the city elections, we are told that the cost is now \$85 million dollars & the sale of the methane would generate less income, though this information was known prior to October 31st, by those involved.

Earlier this year, two years after the pitch was made, we were told that this project would only drive up rates by less than 1%. Now we're told there will be an increase of **11%** with our city manager declining to say whether there will be future rate hikes beyond 2021.

Mike Lunn, the man that pitched the project, is no longer around and neither is Jeff Dood, the city's CFO, or Sara VanderWerff, the comptroller, to explain this fiasco, but that is not relevant. These people worked for the City Commission who had to approve this project. Did the commission practice due diligence?

What was the recommendation of the city manager on this? Was the estimated cost reviewed and why were the engineering costs missing from the estimate? What was the payment of \$1 million dollars to Consumers Energy for?

In 2017 analysts were predicting construction costs would rise nationally, and Grand Rapids because of apartment and medical mile construction was above the national average, due to a booming economy. Was that ever considered?

At the same time, we had a glut of natural gas, a bi-product of fracking. This information was all over the news. Prices are forecast to drop 18% by November of 2020. Was this considered?

In general, were the right questions asked before approval?

A response would be helpful so I can understand how this was botched.

Robin Daning

Response:

From: Clarin, Molly
Sent: Tuesday, November 19, 2019 8:06 AM
To: robanddebdan@yahoo.com
Cc: DeLong, Eric; Kelly, Ruth
Subject: FW: Water & Sewer Rates
Attachments: UAB - Digestion 2019 Rate Study 10-30-2019.pdf; WRS19 Rate Study Presentation 11-11-19 FINAL.pptx

Importance: High

Dear Mr. Daning,

Thank you for attending the November 12, 2019 City Commission meeting and for your interest in the 2019 Rate Study and the Biodigestion Project. The feedback we receive is important and I appreciate the opportunity to answer your questions.

I have attached the communication Deputy City Manager, Eric DeLong shared with the Utility Advisory Board and the City Commission regarding the Biodigestion Project – History and Current State. I believe this communication answers many of the questions you have shared with us. Please be assured that at every step of the way, City Staff have reviewed the alternative – plant expansion and found that Biodigestion remains the best, most cost effective solution. The timing of the project was driven by the need to invest to create additional treatment capacity before we reached capacity limits.

Moving forward, new capacity has been added to the project team, including the new City Engineer, to supplement the team of dedicated and knowledgeable staff currently working toward accomplishing this goal.

Also attached is the power point presentation presented at Committee of the Whole as well as the link to the video of Committee of the Whole where the 2020 rates and the Biodigestion project were discussed: https://www.youtube.com/watch?v=c_138RccQU

Please let me know if you have additional questions.

Thank you

Molly Clarin, Interim Chief Financial Officer
City of Grand Rapids,
Fiscal Services 300
Monroe Ave. NW

Grand Rapids, MI 49503

Email: mclarin@grcity.us

Direct Line: 616-456-3269

Follow-up

Email response from Mr. Daning

From: Robin Daning <robandedbdan@yahoo.com>

Sent: Wednesday, November 20, 2019 1:02 PM

To: Clarin, Molly <meastman@grand-rapids.mi.us>; Kelly, Ruth <rkelly@grand-rapids.mi.us>

Subject: Per Our Conversation On the Biodigester

Molly,

The additional information was helpful and I now have a better understanding. Prior to this my source was four articles from the Grand Rapids over the last three years concerning the biodigester. I learned long ago not to believe everything you read, hence my email to my commissioners and the mayor.

My concern is the RNG portion of the project. Wall Street analysts currently anticipate a drop-in price of 18% by next November. And I just read that Wisconsin has 37 digesters and the Wisconsin Public Service Commission asked for a re-evaluation of new projects because the cost of wind and solar energy have dropped, utilities are no longer purchasing biogas energy at rates that make the digesters profitable.

Something that is unclear, the estimated cost of RNG of the project is slated to be about \$15 million dollars and I am assuming the \$1 million dollars to consumers is to connect to their grid. The estimate revenue is slated to be \$3 million dollars, but that number lumps all bi-products of value together. What is the estimated revenue for just the RNG?

I thank you for your time. Robin

Attachments: referenced communication Deputy City Manager, Eric DeLong shared with the Utility Advisory Board and the City Commission regarding the Biodigestion Project – History and Current State

MEMORANDUM

CITY OF GRAND RAPIDS

TO: Utility Advisory Board

FROM: Eric DeLong, Deputy City Manager

SUBJECT: Biodigester Program – History and Current Status

Background:

The City of Grand Rapids (“the City”) and surrounding region has experienced significant economic growth, resulting in more volume running through the Water Resource Recovery Facility (“WRRF”) from general population growth as well as the increase in the number of surcharge customers discharging into the Sanitary Sewer System (“the System”). In 2015, the City began the process of evaluating three primary options to address the increased loading demand on the WRRF. The primary options were as follows:

- 1.) Place greater regulations on surcharge customers
- 2.) Increase the capacity at WRRF through plant expansion
- 3.) Increase the capacity at WRRF by developing an alternate method to provide treatment services

During evaluation, Option 1 was ruled out because it would adversely impact economic growth as well as the System’s ability to attract new customers. Option 2 also was determined to be costly and would not produce complementary benefits for UAB partners and customers. In the May 19, 2016 memo to the Utility Advisory Board (“UAB”), it was stated the cost of plant expansion would be over 60 million dollars which did not include the additional operating costs involved in running a larger operation. This communication also stated that by pursuing Option 3- Biodigestion, the System would be able to reduce its revenue requirement by roughly \$300,000 annually through energy savings based on a preliminary investment estimate of approximately 20 million dollars.

Biodigestion was chosen as the best alternative to the other options as it would also provide an opportunity for the plant to benefit from electrical savings through co-generation, decrease the cost of solids treatment by 30%, and generate revenue through an industrial liquid by-product program.

Work began on project development, which included design phase engineering services and project estimates were refined. The construction management agreement with the Christman Company was approved at the City’s Community Development Committee on August 15, 2017. The digester estimate increased to \$39,306,115 as a result of a

more defined project scope, the added costs related to site preparation and the cost of construction at that time. It was also determined that a phosphorus recovery system would be needed to minimize struvite in the System. The phosphorus recovery system was estimated to cost 6 million dollars for a total project cost of 45 million dollars. Mindful of the increase in the investment, the project team again evaluated the alternative project, plant expansion. Plant expansion was determined to still be a much larger investment at approximately 90 million dollars.

The ground breaking for the biodigester was in December 2017. Internal rate impact estimations with very conservative assumptions for electrical savings and revenue from hauled waste were around 3.8% in the first year and the 0.2% reductions every year thereafter. At that time, evaluations took place for Algae for \$40 million and Chemical Feed for \$8 million.

In summer of 2018, the final package was bid for the construction of the biodigester. This bid came in significantly over project estimates. These overages were largely due to the construction bidding environment, including the impact of tariffs on project elements. The team value engineered the construction costs to arrive a guaranteed maximum price of \$53,165,308 with an approved not to exceed amount of \$57,925,427.

With the cost increase of the biodigester, it was determined that the System needed to explore renewable natural gas (“RNG”) to help recover additional revenue over the savings expected to be generated by the methane generation approach to mitigate the cost of the biodigester. In October 2018, the RNG system was estimated to cost \$5 million dollars. This investment allowed the total project to have positive cashflow with an estimated rate impact of a three percent reduction in the first year followed by 1.42% decrease and small incremental increased thereafter as the revenue from RINS, phosphorus sales, and liquid industrial by-product increased.

Project Estimate – October 2018	
Biodigester	\$57,286,593
RNG	5,000,000
Phosphorus	6,000,000
Additional design/investment	2,600,000
Total	\$70,886,593

From update emailed to UAB 10/19/18

Current Status of the Project:

Since the fall of 2018, the System has now completed bidding the RNG equipment and its installation. Bids have also been awarded for the phosphorus recovery equipment. The installation of the phosphorus recovery equipment went out for bid on October 23, 2019 but as of today, the installation cost of phosphorus recovery equipment is still an estimate. Other variances from the October 2018 estimates include the engineering

costs for each aspect of the project, the costs included as result of project delays, as well as similar issues with the construction bids coming in higher than budgeted.

The estimated investment is as follows:

Biodigester	\$57,286,593
RNG	14,821,200
Phosphorus*	7,604,700
Consumers	995,000
Engineering	4,619,590
Total	\$85,327,083

**Note the Phosphorus Recovery is still an estimate. Bidding process for installation of the Phosphorus Recovery equipment began on October 23, 2019.*

RINS prices are market based and have fallen significantly since this project was originally adopted, moving from \$2.92 to \$0.59 per gallon of renewable fuel. Because of this, the annual revenue associated with the RNG, phosphorus sales and liquid industrial by-product is now estimated to be approximately \$3 Million, with a partial year in 2020 and a full year in 2021 thereafter. Even with this revenue offset and anticipated savings in general operations, the total estimated rate impact of this project would be over 11% for 2021.

While these projects included in the Biodigestion system do not affect the 2019 Rate Study and 2020 rates because the project components are not yet in operation, the Rate Study methodology does allow for adjustment to the revenue requirement to mitigate predicted rate impacts on rate payers. As discussed during the October 17, 2019, Utility Advisory Board Meeting, preloading some of the costs and increasing 2020 rates would temper the 2021 rate impact as stated above.

During this Meeting, preloading \$30 Million was selected as appropriate for mitigating the 2021 rate increase risk.

Amount of Project Adjustment	2020 Rate Estimate
No adjustment	0.04%
\$30 Million	3.49%

Note: These estimates are based on the 2019 rate model, which is still in development. The 0.04% rate with no adjustment is the current rate as of 10/23/2019. This estimate is different from the amount presented in UAB on October 17, 2019. The study is still in progress so results may change again prior to presentation of the Preliminary Rate Study in November 2019.

2019 and 2020 Rate Study Impact:

The 2020 Sewer Rate Estimate with no digestion built in is approximately 0.04%. With \$30 million built into the rate base, the total rate increase for sewer is 3.49%. The attached financial table shows the rate estimation for individual partner communities. Scaling the Biodigestion Project in over two rate years will spread the impact out and temper rates for UAB partners and customers.

The revenue requirement is built through various components: operating and maintenance expenses, assets, revenue credits, City and Customer Community Circuit Breaker and billed volume. The 2019 Rate Study includes a favorable year for these components, creating an opportunity to use the known rate environment and smooth out the potential impact of this significant project.

To date, the Sanitary Sewer System has spent \$26,229,667.41 on the Biodigestion, RNG and Phosphorus Recovery projects. This work has been funded by bonds issued in May 2018 and system cash. The debt service has been supported by the system cash of the Sewer Fund. When each of these projects become operational, they will be supported by rate revenue per the rate study methodology.

As of October 2019, significant work has been done on this project. Picture 1 shows one of the three digester tanks that will be installed. The building process for the tank starts from top to bottom, while the tank is rolled out in one-foot steel sections. The Chemical building shown in Picture 2 will hold polymer for the thickening process and waste chemicals for the membrane reactor used to treat liquid industrial by-product. The yellow building to the right will house the digester's biological odor control used for the biodigesters, RNG and phosphorus removal. Picture 3 is the base for the four volute thickeners, which will thicken raw sludge from the plant and waste activated sludge that is left over from the treatment process. The sludge hoppers shown in Picture 4 receive and transfer the thickened sludge to the digester for processing. Picture 5 is a glimpse at the extensive piping in the digester basement. At any given time, approximately 75 people are actively working on site to accomplish this project.

A live webcam of the Biodigestion construction can be found here:

<http://webcams.christmanco.com/grand-rapids-biodigester>.

If you have questions, please contact me at (616) 456-3269 or mclarin@grand-rapids.mi.us



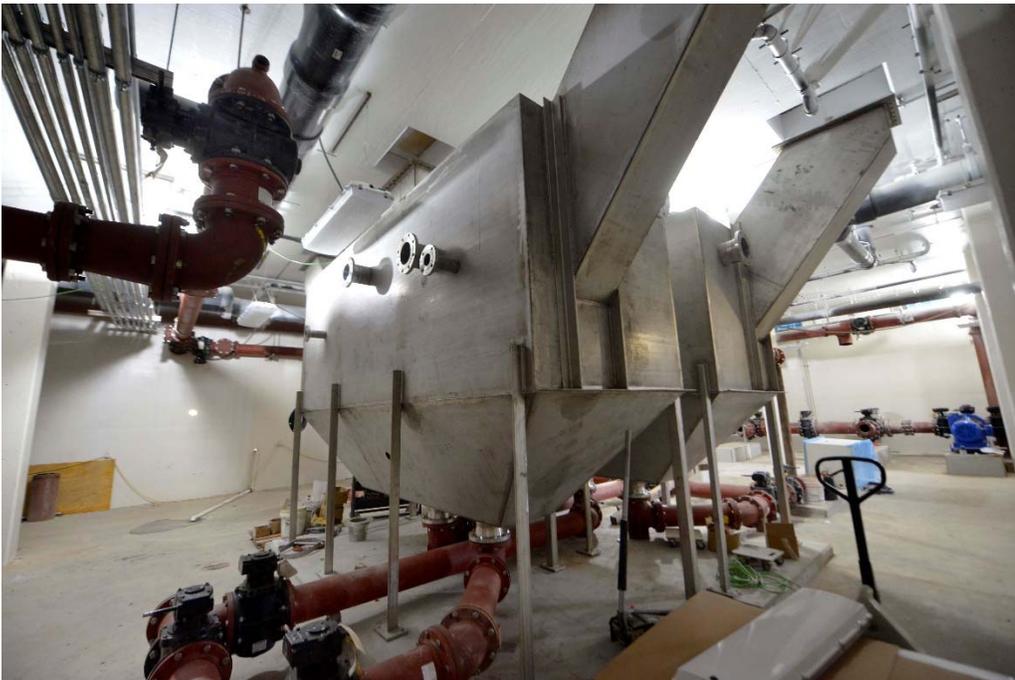
Picture 1 One of the digester tanks. Photo by Katy Batdorff Photography.



Picture 2 The Chemical building. Photo by Katy Batdorff Photography.



Picture 3 Volute thickener bases. Photo by Katy Batdorff Photography.



Picture 4 Sludge Hoppers. Photo by Katy Batdorff Photography.



Picture 5 Acting Water Resource Recovery Facility Superintendent Brian Vu and staff walking the pipe gallery in the basement of the digester. Photo by Katy Batdorff Photography.

Appendix D - Public Comment Period Feedback and Responses

DRAFT - INTERNAL USE ONLY

CITY OF GRAND RAPIDS, MICHIGAN
2019 PRELIMINARY RATE STUDY
SUMMARY OF SEWER REVENUE REQUIREMENT CHANGES
October 30, 2019

	TOTAL REVENUE REQUIREMENTS- HISTORICAL METHOD (BEFORE CIRCUIT BREAKER)	CHANGE IN REVENUE REQUIREMENTS FOR PENALTY FEES		TOTAL INITIAL REVENUE REQUIREMENTS- NEW METHOD	DECREASE IN REVENUE REQUIREMENTS- APPLICATION OF CITY- COMM. CIRCUIT BRKR		LESS: CUSTOMER COMMUNITY CONTRIBUT./REIMBURS.	TOTAL REVENUE REQUIREMENTS- NEW METHOD	TOTAL PROJECTED REVENUE - PER CURRENT RATES	CHANGE	
		AMOUNT	PERCENT		COMM. CIRCUIT BRKR	IN REVENUE				AMOUNT	PERCENT
GRAND RAPIDS	\$ 38,458,705	\$ 392,541	1.02%	\$ 38,851,246	\$ -	\$ -	\$ -	\$ 38,851,246	\$ 37,708,111	\$ 1,143,135	3.03%
WALKER	4,949,839	48,392	0.98%	4,998,231	(72,929)	-	-	4,925,302	4,736,323	188,979	3.99%
KENTWOOD	4,565,627	44,975	0.99%	4,610,602	(116,539)	-	-	4,494,063	4,321,630	172,433	3.99%
CASCADE TWP	2,640,144	25,714	0.97%	2,665,858	(51,772)	-	-	2,614,086	2,513,786	100,300	3.99%
GRAND RAPIDS TWP	2,655,942	25,880	0.97%	2,681,822	(19,916)	-	-	2,661,906	2,559,771	102,135	3.99%
TALLMADGE TWP	437,317	4,983	1.14%	442,300	-	-	-	442,300	487,381	(45,081)	-9.25%
WRIGHT TWP	306,113	2,880	0.94%	308,993	(15,326)	-	-	293,667	282,399	11,268	3.99%
EAST GRAND RAPIDS	919,968	-	0.00%	919,968	-	-	-	919,968	821,831	98,137	11.94%
ADA TWP	1,392,221	-	0.00%	1,392,221	-	-	-	1,392,221	1,262,054	130,167	10.31%
CALEDONIA TWP	162,461	-	0.00%	162,461	-	-	-	162,461	144,064	18,397	12.77%
GAINES TWP	212,197	-	0.00%	212,197	-	-	-	212,197	211,655	542	0.26%
SYSTEM	\$ 56,700,534	\$ 545,365	0.96%	\$ 57,245,899	\$ (276,482)	\$ -	\$ -	\$ 56,969,417	\$ 55,049,005	\$ 1,920,412	3.49%

SUMMARY OF CIRCUIT BREAKER		SUMMARY OF SYSTEM CHANGE	
CITY/COMMUNITY CB	\$ 477,194	TOTAL INITIAL REVENUE REQUIREMENTS	\$ 57,245,899
INDIVIDUAL CB	68,171	LESS: PROJECTED REVENUES	(55,049,005)
TOTAL	\$ 545,365	TOTAL INITIAL CHANGE- AMOUNT	\$ 2,196,894
		TOTAL INITIAL CHANGE- PERCENT	3.99%