

City of Grand Ledge

Sewer Rate Report

4/5/2018



Michigan Rural
Water Association



Prepared By:

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GRAND LEDGE SEWER

GRAND LEDGE SEWER

CONCLUSION OF ANALYSIS

COST PER	CURRENT RATES	CALCULATED RATES	DIFFERENCE
1,000 GAL.	\$8.68	\$8.86	\$0.18
BASE RATE / READY TO SERVE CHARGE PER MONTH			
PER CUSTOMER	CURRENT RATES	CALCULATED RATES	DIFFERENCE
RTS	\$7.97	\$8.14	\$0.17

The above rates are based on an input budget of	\$2,155,337
The above rates are based on invoicing the following gallons of water / sewer	206,512,801
The above rates are based on the following number of customers	3,230
The above rates are based on the following number of Residential Equivalent Units (REU's)	38,760

If all numbers listed above stay true the new calculated rates will generate the input budget "exactly". Not a penny more or a penny less.

This Rate Analysis uses "Full Cost Pricing" to determine the user fees.

The above table shows the Current Rate, the new Calculated Rate, and the difference between the current and new rate changes.

Full Cost Pricing Is:

Maintaining your system's financial stability by ensuring a sufficient revenue stream.

Collect and reserve the funds needed to cover the costs of future asset rehabilitation and compliance with future regulations, among other things.

Plan ahead for reasonable, gradual rate increases when necessary.

Deliver a fair priced, high-quality drinking water to your customers now and in the future.

NOTE:

The above **CALCULATED RATES** will generate only enough to meet the current budge input into the rate analysis program. In order to charge a lesser amount, the budget must first be reduced.

MICHIGAN RURAL WATER ASSOCIATION RATE EVALUATION PROGRAM

CALCULATED RESULTS					2018
GRAND LEDGE SEWER	ANNUAL BUDGET	BASE FIXED	COST PER 3/4" METER	CONSUMPTION PORTION	COST / UNIT OF WATER
LABOR & BENEFITS	\$577,586	\$69,310	\$1.79	\$508,276	\$2.46
OPERATION & MAINTENANCE EXPENSES	\$642,451	\$75,167	\$1.94	\$567,284	\$2.75
LOANS, BONDS, INTEREST, ANNUAL PAYMENT	\$439,203	\$87,841	\$2.27	\$351,362	\$1.70
ASSET REPLACEMENT AND REHABILITATION	\$203,500	\$36,147	\$0.93	\$167,353	\$0.81
CAPITAL IMPROVEMENT	\$292,597	\$48,571	\$1.25	\$244,026	\$1.18
TOTALS	\$2,155,337	\$317,036	\$8.18	\$1,838,301	\$8.90
		15%		85%	
NON OPERATING INCOME REDUCTION			0.04		0.04
CALCULATED RATE - FOR 3/4" METER / REU PER MONTH			\$ 8.14	1,000 GAL.	\$ 8.86
TOTAL ANNUAL EQUIVALENT REU'S 38,760		CURRENT RATES	\$7.97		\$8.68
ANTICIPATED WATER / SEWER SOLD 206,512,801		INCREASE OF	\$0.17		\$0.18
RESERVE PORTION OF BUDGET 23%		PERCENT INCREASE	2.1%		2.1%
INVOICES PER YEAR 12		EVERY MILLION GALLONS GENERATES REVENUE OF			\$8,860
THE COST PER "UNIT / WATER" DOES INCLUDE INCLINING OR DECLINING RATES	NO				
ARE ANY GALLONS INCLUDED WITH THIS CALCULATED BASE RATE ?	NO				
IS BASE RATE PER REU. - OR PER METER SIZE?	METER SIZE	INCREASE GENERATES	\$38,760		\$206,513

MICHIGAN RURAL WATER ASSOCIATION RATE EVALUATION PROGRAM

INCOME GENERATED - BASED ON NEW RATES

GRAND LEDGE SEWER				
	GRAND LEDGE SEWER	ONEIDA TWP	\$0.00	REVENUE
	New Cost per Unit of Water Sold			NEW RATES
PER 1,000 GAL.	\$8.86	\$8.86	\$8.86	
UNITS Sold	185,222	0	21,290	206,513
Income	\$1,641,131.92	\$0.00	\$188,640.24	\$1,829,772
METER SIZE				
	BASE RATE PER MONTH			
RTS	\$8.14	\$8.14	\$8.14	
<i>INCOME</i>	\$264,761.90	\$37,711.47	\$0.00	\$302,473
1	\$8.14	\$8.14	\$8.14	
<i>INCOME</i>	\$3,419.43	\$1,563.17	\$0.00	\$4,983
1.5	\$8.14	\$8.14	\$8.14	
<i>INCOME</i>	\$2,637.85	\$0.00	\$0.00	\$2,638
2	\$8.14	\$8.14	\$8.14	
<i>INCOME</i>	\$4,103.32	\$195.40	\$0.00	\$4,299
3	\$8.14	\$8.14	\$8.14	
<i>INCOME</i>	\$781.58	\$0.00	\$0.00	\$782
4	\$8.14	\$8.14	\$8.14	
<i>INCOME</i>	\$293.09	\$0.00	\$0.00	\$293
6	\$8.14	\$8.14	\$8.14	
<i>INCOME</i>	\$97.70	\$0.00	\$0.00	\$98
Total Fixed Income				\$315,565
TOTAL Combined Customer Income				\$2,145,337
Non Sales Income				\$10,000
Total Income				\$2,155,337
Budget				\$2,155,337
Difference				\$0.00

GRAND LEDGE SEWER					ONEIDA TWP					
RATE CLASS 1					RATE CLASS 2					
GRAND LEDGE SEWER					ONEIDA TWP					
TYPE OF WATER UNITS	1,000 GALLONS	ALL CUSTOMERS PAY THE SAME RTS RATE - & THE SAME COST PER UNIT OF SEWAGE - UNLIKE THE WATER RATES			TYPE OF WATER UNITS	1,000 GALLONS	Ratio Entity # 2 vs. 1			
COST PER WATER UNIT	\$8.68				COST PER WATER UNIT	\$8.68	1.00			
INVOICES PER YEAR	12				INVOICES PER YEAR	12				
METER SIZE - INCHES	CURRENT "BASE RATE" CHARGE	NUMBER OF UNITS	INVOICE FREQUENCY	ANNUAL INCOME	METER SIZE - INCHES	CURRENT "BASE RATE" CHARGE	Ratio Entity # 2 vs. 1	NUMBER OF UNITS	INVOICE FREQUENCY	ANNUAL INCOME
"3/4"	\$7.97	2710	12	\$259,184	"3/4"	\$7.97	1.00	386	12	\$36,917
1	\$7.97	35	12	\$3,347	1	\$7.97		16	12	\$1,530
1.5	\$7.97	27	12	\$2,582	1.5	\$7.97			12	\$0
2	\$7.97	42	12	\$4,017	2	\$7.97		2	12	\$191
3	\$7.97	8	12	\$765	3	\$7.97			12	\$0
4	\$7.97	3	12	\$287	4	\$7.97			12	\$0
6	\$7.97	1	12	\$96	6	\$7.97			12	\$0
TOTALS		2826		\$270,279				404		\$38,639

Current Rate Charges

Currently customers are charged based on two factors

Consumption Charge, Which is based on gallons of water that goes through the customer's water meter. Sewage usage is based on water usage. Customers are currently invoiced per unit of water / sewer at the listed price.

A "Base Rate" charge based of \$ XX for a 3/4" meter, this fee increases based on the size of the customers water meter, which is listed in inches. Some customers are invoiced monthly, others quarterly/

GRAND LEDGE SEWER ASSET INVENTORY, REPLACEMENT & REHABILITATION SCHEDULE								
2018								
ASSETS COLLECTION SYSTEM		ASSET REPLACEMENT SCHEDULE						ANNUAL RESERVE
EQUIPMENT LIST / MAINTENANCE ACTIVITY	DESCRIPTION	ORIGINAL INSTALLATION OR REHAB YEAR	NORMAL INTENDED USEFUL LIFE OR NEXT REHAB	CURRENT AGE	NEXT REPLACEMENT YEAR	REMAINING LIFE - YEARS BEFORE REPLACEMENT	REPLACEMENT COST FUNDED BY RATES	REPLACEMENT MONEY RESERVED ANNUALLY
Eaton Hwy								
(2) Pumps		2015	15	3	2030	12	\$10,000	\$667
ELECTRIC PANEL & CONTROLS		1980	25	38	2005	-13	\$15,000	\$600
Loch Ledge								
(2) Pumps		2014	15	4	2029	11	\$10,000	\$667
ELECTRIC PANEL & CONTROLS		2010	25	8	2035	17	\$15,000	\$600
Whitney St								
(2) Pumps		2008	15	10	2023	5	\$15,000	\$1,000
ELECTRIC PANEL & CONTROLS		2018	25	0	2043	25	\$30,000	\$1,200
(2) Motors		2008	15	10	2023	5	\$4,000	\$267
Burt Ave								
(2) Pumps		2017	15	1	2032	14	\$12,000	\$800
ELECTRIC PANEL & CONTROLS		1990	25	28	2015	-3	\$15,000	\$600
W River St								
Pump 1	NEW 1990 - REHABED 2010	2018	5	0	2023	5	\$2,500	\$500
PUMP 2	NEW 1990 - REHABED 2011	2017	5	1	2022	4	\$2,500	\$500
PUMP 3	NEW 1990 - REHABED 2011	2011	5	7	2016	-2	\$2,500	\$500
MOTOR 1	NEW 1990 - REHABED 2010 & 2017	2017	10	1	2027	9	\$1,650	\$165
MOTOR 2	NEW 1990 - REHABED 2011	2011	10	7	2021	3	\$1,650	\$165
MOTOR 3	NEW 1990 - REHABED 2011	2011	10	7	2021	3	\$1,650	\$165
(3) Check Valve 6" - 900 EACH		1990	25	28	2015	-3	\$2,700	\$108
Control Panel Allen Brady		2010	20	8	2030	12	\$20,000	\$1,000
Electric Panel/Gear		2010	20	8	2030	12	\$8,500	\$425
(3) VFD	2 REPLACED IN 2016	2016	15	2	2031	13	\$6,000	\$400
Mag/Flowmeter		2010	20	8	2030	12	\$3,000	\$150
Overflow Mag		2010	25	8	2035	17	\$3,000	\$120
Generator		1990	40	28	2030	12	\$50,000	\$1,250
Confined Space Hoist/System		2016	20	2	2036	18	\$2,500	\$125
BUILDING MAINT - ROOF & HEAT ETC		2015	20	3	2035	17	\$4,000	\$200
W Jefferson St								
(2) Pumps		2006	20	12	2026	8	\$63,300	\$3,165
Generator		2006	30	12	2036	18	\$40,000	\$1,333
(2) Check Valves		2006	25	12	2031	13	\$4,600	\$184
(2) VFD Cutler Hammer SUX 9000		2006	15	12	2021	3	\$12,000	\$800
20 Valves Butterfly		2006	25	12	2031	13	\$14,700	\$588
Mag Flowmeter		2006	15	12	2021	3	\$3,800	\$253
Controls Multismart		2006	15	12	2021	3	\$2,600	\$173

**GRAND LEDGE SEWER
ASSET INVENTORY, REPLACEMENT & REHABILITATION SCHEDULE**

2018

**ANNUAL
RESERVE**

ASSETS COLLECTION SYSTEM

ASSET REPLACEMENT SCHEDULE

EQUIPMENT LIST / MAINTENANCE ACTIVITY	DESCRIPTION	ORIGINAL INSTALLATION OR REHAB YEAR	NORMAL INTENDED USEFUL LIFE OR NEXT REHAB	CURRENT AGE	NEXT REPLACEMENT YEAR	REMAINING LIFE - YEARS BEFORE REPLACEMENT	REPLACEMENT COST FUNDED BY RATES	REPLACEMENT MONEY RESERVED ANNUALLY
Electric Gear/Panels		2006	25	12	2031	13	\$15,000	\$600
Fitzgerald Field								
(2) Pumps		1992	30	26	2022	4	\$10,300	\$343
Controls		2018	20	0	2038	20	\$4,400	\$220
							\$408,850	\$ 19,833

**GRAND LEDGE SEWER
ASSET INVENTORY, REPLACEMENT & REHABILITATION SCHEDULE**

2018

**ANNUAL
RESERVE**

ASSETS WWTP 1

ASSET REPLACEMENT SCHEDULE

EQUIPMENT LIST / MAINTENANCE ACTIVITY	ORIGINAL INSTALLATION YEAR	NORMAL INTENDED USEFUL LIFE	CURRENT AGE	NEXT REPLACEMENT YEAR	REMAINING LIFE YEARS BEFORE REPLACEMENT	REPLACEMENT COST FUNDED BY RATES	REPLACEMENT MONEY RESERVED ANNUALLY
MAINTENANCE BLD							
/Screening Room							
Bar Screen	2011	20	7	2031	13	\$61,700	\$3,085
Washing Screw Compactor	2011	20	7	2031	13	\$40,650	\$2,033
Controls	2011	20	7	2031	13	\$22,300	\$1,115
Recycle Pump	2011	20	7	2031	13	\$8,650	\$433
Electric Controls	2011	20	7	2031	13	\$5,000	\$250
Gas Detectors	2011	10	7	2021	3	\$7,500	\$750
Exhaust Fan	2011	20	7	2031	13	\$1,000	\$50
Chlorine Tablet	2011	20	7	2031	13	\$5,000	\$250
Muffin Monster	2011	25	7	2036	18	\$10,000	\$400
MAINTENANCE BLD - ROOF ETC.	2011	20	7	2031	13	\$35,000	\$1,750
ELECTRICAL PANELS	2011	25	7	2036	18	\$20,000	\$800
Grit Building							
Sampler for Influent	2011	15	7	2026	8	\$5,200	\$347
Grit Blower and 10 H.P. Motor	2011	25	7	2036	18	\$22,500	\$900
Exhaust Fan	2011	20	7	2031	13	\$1,500	\$75
Parshall Flume	2011	30	7	2041	23	\$2,570	\$86
Influent Flow Meter	2011	15	7	2026	8	\$4,000	\$267
Chlorine Room							
Chlorine Pace Unit	2011	10	7	2021	3	\$3,000	\$300
(2) Chlorine Regulators	2018	10	0	2028	10	\$2,500	\$250
Chlorine Gas Leak Detector	2011	15	7	2026	8	\$2,531	\$169
Final Effluent Flow Meter	2011	10	7	2021	3	\$3,500	\$350
Pump Room							
1 Lobe Pro Sludge Pumps 15 H.P. 1	2018	10	0	2028	10	\$15,000	\$1,500
Lobe Pro Sludge Pumps 10 H.P. 2	2014	10	4	2024	6	\$15,000	\$1,500
Return Pumps 15 H.P. 1	2010	25	8	2035	17	\$13,000	\$520
Return Pumps 15 H.P. 2	2007	25	11	2032	14	\$13,000	\$520
Return Pumps 15 H.P. 3	2013	25	5	2038	20	\$13,000	\$520
(2) Effluent Pumps 10 H.P.	2012	20	6	2032	14	\$4,630	\$232
Power Valve	2014	10	4	2024	6	\$1,900	\$190
(3) "Mags" Return Sludge Waste	2009	15	9	2024	6	\$8,330	\$555
Cummins Diesel Powered Generator - NEW 2011 40 YRS OUT FOR REPLACEMENT							
Intermediate Lift Station							
(3) 15 H.P. Submersible Pumps	2011	20	7	2031	13	\$42,000	\$2,100

**GRAND LEDGE SEWER
ASSET INVENTORY, REPLACEMENT & REHABILITATION SCHEDULE**

2018

**ANNUAL
RESERVE**

ASSETS WWTP 1

ASSET REPLACEMENT SCHEDULE

EQUIPMENT LIST / MAINTENANCE ACTIVITY	ORIGINAL INSTALLATION YEAR	NORMAL INTENDED USEFUL LIFE	CURRENT AGE	NEXT REPLACEMENT YEAR	REMAINING LIFE YEARS BEFORE REPLACEMENT	REPLACEMENT COST FUNDED BY RATES	REPLACEMENT MONEY RESERVED ANNUALLY
Hoist for Pump Service	2011	30	7	2041	23	\$2,100	\$70
Electric Panel and Controls	2011	20	7	2031	13	\$10,000	\$500
Primary Tanks (2)							
Flight Drive	1975	41	43	2016	-2	\$35,000	\$854
Cross Screws	1975	45	43	2020	2	\$25,000	\$556
Replacement Chain/Flights	2009	15	9	2024	6	\$22,140	\$1,476
Aeration Tanks							
Replacement Membranes for All Diffusers	2009	15	9	2024	6	\$12,000	\$800
Blower Room							
Centrifugal Blowers 1	2014	20	4	2034	16	\$33,000	\$1,650
Centrifugal Blowers 2	2007	20	11	2027	9	\$33,000	\$1,650
Centrifugal Blowers 3	2010	20	8	2030	12	\$33,000	\$1,650
						\$595,201	\$ 30,500

**GRAND LEDGE SEWER
ASSET INVENTORY, REPLACEMENT & REHABILITATION SCHEDULE**

2018

**ANNUAL
RESERVE**

ASSETS WWTP 2

ASSET REPLACEMENT SCHEDULE

EQUIPMENT LIST / MAINTENANCE ACTIVITY	ORIGINAL INSTALLATION YEAR	NORMAL INTENDED USEFUL LIFE	CURRENT AGE	NEXT REPLACEMENT YEAR	REMAINING LIFE - YEARS BEFORE REPLACEMENT	REPLACEMENT COST FUNDED BY RATES	PERCENT OF ASSET LEFT	PERCENT CONSUMED	REPLACEMENT MONEY RESERVED ANNUALLY
Final Clarifier Drives									
(2) Final Drive Gearboxes	1975	50	43	2025	7	\$100,000	14%	86%	\$2,000
Chemical Feed Room									
Lime Pumps 1	2013	15	5	2028	10	\$8,500	67%	33%	\$567
Lime Pumps 2	2010	15	8	2025	7	\$8,500	47%	53%	\$567
Ferric Pumps (2)	2014	15	4	2029	11	\$8,850	73%	27%	\$590
Bisulfite Pumps	2017	15	1	2032	14	\$4,500	93%	7%	\$300
5,000 Gallon Ferric Tanks (2)	2016	20	2	2036	18	\$15,000	90%	10%	\$750
Pulse Dampeners for Lime Pumps (2)	2014	25	4	2039	21	\$4,364	84%	16%	\$175
Lime Dust Collector	1982	40	36	2022	4	\$8,000	10%	90%	\$200
Lab Equipment									
Spectrophotometer	2016	10	2	2026	8	\$5,000	80%	20%	\$500
"Top Loader" Scale	2005	20	13	2025	7	\$1,300	35%	65%	\$65
"Door Scale"	2000	20	18	2020	2	\$3,500	10%	90%	\$175
Drying Oven	2000	20	18	2020	2	\$3,000	10%	90%	\$150
pH Meter	2016	10	2	2026	8	\$1,500	80%	20%	\$150
Muffle Furnace	2017	10	1	2027	9	\$2,000	90%	10%	\$200
BOD Incubator	2014	15	4	2029	11	\$4,300	73%	27%	\$287
Autoclave	2012	15	6	2027	9	\$5,200	60%	40%	\$347
BOD Meter	2017	8	1	2025	7	\$2,500	88%	13%	\$313
Water Softener	2000	20	18	2020	2	\$3,000	10%	90%	\$150
Primary Sampler	2010	15	8	2025	7	\$6,150	47%	53%	\$410
Final Sampler	2008	15	10	2023	5	\$6,150	33%	67%	\$410
Scada Computer	2015	5	3	2020	2	\$4,500	40%	60%	\$900
Scada Computer "Backup"	2011	7	7	2018	0	\$4,500	0%	100%	\$643
SCADA SOFTWARE	2011	10	7	2021	3	\$20,000	30%	70%	\$2,000
Miscellaneous									
Heat and A/C Unit for WWTP on Roof	2010	20	8	2030	12	\$15,000	60%	40%	\$750
ROOF - MAIN WWTP BUILDING	1999	20	19	2019	1	\$35,000	5%	95%	\$1,750
Vehicles									
Vactor	2011	15	7	2026	8	\$425,000	53%	47%	\$28,333
Camera Truck	2013	15	5	2028	10	\$65,250	67%	33%	\$4,350
T-1 PICKUP INCLUDES PLOW & SERVICE BODY	2017	8	1	2025	7	\$38,500	88%	13%	\$4,813

**GRAND LEDGE SEWER
ASSET INVENTORY, REPLACEMENT & REHABILITATION SCHEDULE**

2018

**ANNUAL
RESERVE**

ASSETS WWTP 2	ASSET REPLACEMENT SCHEDULE								REPLACEMENT MONEY RESERVED ANNUALLY
EQUIPMENT LIST / MAINTENANCE ACTIVITY	ORIGINAL INSTALLATION YEAR	NORMAL INTENDED USEFUL LIFE	CURRENT AGE	NEXT REPLACEMENT YEAR	REMAINING LIFE - YEARS BEFORE REPLACEMENT	REPLACEMENT COST FUNDED BY RATES	PERCENT OF ASSET LEFT	PERCENT CONSUMED	
Crane/Hoist	2014	20	4	2034	16	\$2,800	80%	20%	\$140
T2 PICKUP	2018	10	0	2028	10	\$19,000	100%	0%	\$1,900
ROOFS - GRIT, INTERMEDIATE LS, VALVE, CONTROL BLD	1997	20	21	2017	-1	\$15,000	-5%	105%	\$750
TRANSFORMER - ELECTRICAL NEW IN 2011 SHOULD LAST APROX 40 YEARS									
						\$845,864	59%		\$ 54,632