



Gull Lake Sewer and Water Authority

County of Kalamazoo, State of Michigan

Sewer Fund – Rate Study

March 4, 2022



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Gull Lake Sewer and Water Authority
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Subject: Gull Lake (Michigan) Sewer and Water Authority - Sewer Fund Rate Study

Dear Gull Lake Sewer and Water Authority:

It is our pleasure to provide you this analysis of your sewer fund and review of the rate structure. A rate study is not a historical document, it is a working document, which should be used as a reference for budget and finance decision-making. To this end, Baker Tilly is available to discuss the study at any point in the future.

Rates and charges must reflect the customer base being served. As such, the rate study found in these pages is unique to your authority. The goal of every rate study is to develop a rate structure and revenue support system that meets the needs of operations, maintenance, and capital improvement and at the same time is as economical and equitable to the customers as possible, this is referred to as a “cost of service” analysis. You will find the observations and recommendations meet your needs and reflect your customer base.

By acceptance of this study the authority board understands and accepts the responsibility and liability for potential challenges to the rate structure and management of funds. Rate studies, while often based on various methods, industry guidelines, do not follow a clear standard as does, for example, a CPA in producing an audit according to Generally Accepted Accounting Principles. Furthermore, state law and case law do not provide any reasonable or comprehensive guidance regarding methodology, rate structure or management of fund balances. Baker Tilly is reliant upon authority officials, and other sources, who have access to relevant data to provide accurate information. The authority accepts that fund management and rate adjustment recommendations are inherently subject to estimations and projections and, as such, no assurance is provided regarding the actual performance of the funds over time. The authority is advised to seek legal counsel regarding the implementation of any recommendations and their liability implications.

As always, it was a pleasure serving you and do not hesitate to call if you wish to further discuss our findings.

Sincerely,

BAKER TILLY MUNICIPAL ADVISORS, LLC

Andy Campbell, CPA, Director

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Executive Summary

1.1 Community Background

The Gull Lake Sewer and Water Authority is in Kalamazoo County, Michigan. Founded in the 1980's, the authority collects sewage from over 4,800 customers within northeastern Kalamazoo County, Michigan. This is done by using over 50 miles of collector sewers, and 36 pumping stations and associated trunk sewers. The sewage is pumped to the City of Kalamazoo where it is treated and then disposed of. The authority provides complete system management, maintenance, repair, and upgrades.

Source: Gull Lake Sewer and Water Authority

1.2 Objectives

To identify the revenue support and fund management needed to fulfill the authority's operations & maintenance, and capital improvements to the system while maintaining adequate cash reserves to be able to respond to unforeseen circumstances.

1.3 Potential Rates

Based on our analysis and direction from authority officials, Baker Tilly is recommending a one-time increase of \$30.00 to the authority's quarterly residential equivalent unit charge as well as a \$9.00 inflationary increase to all years thereafter.

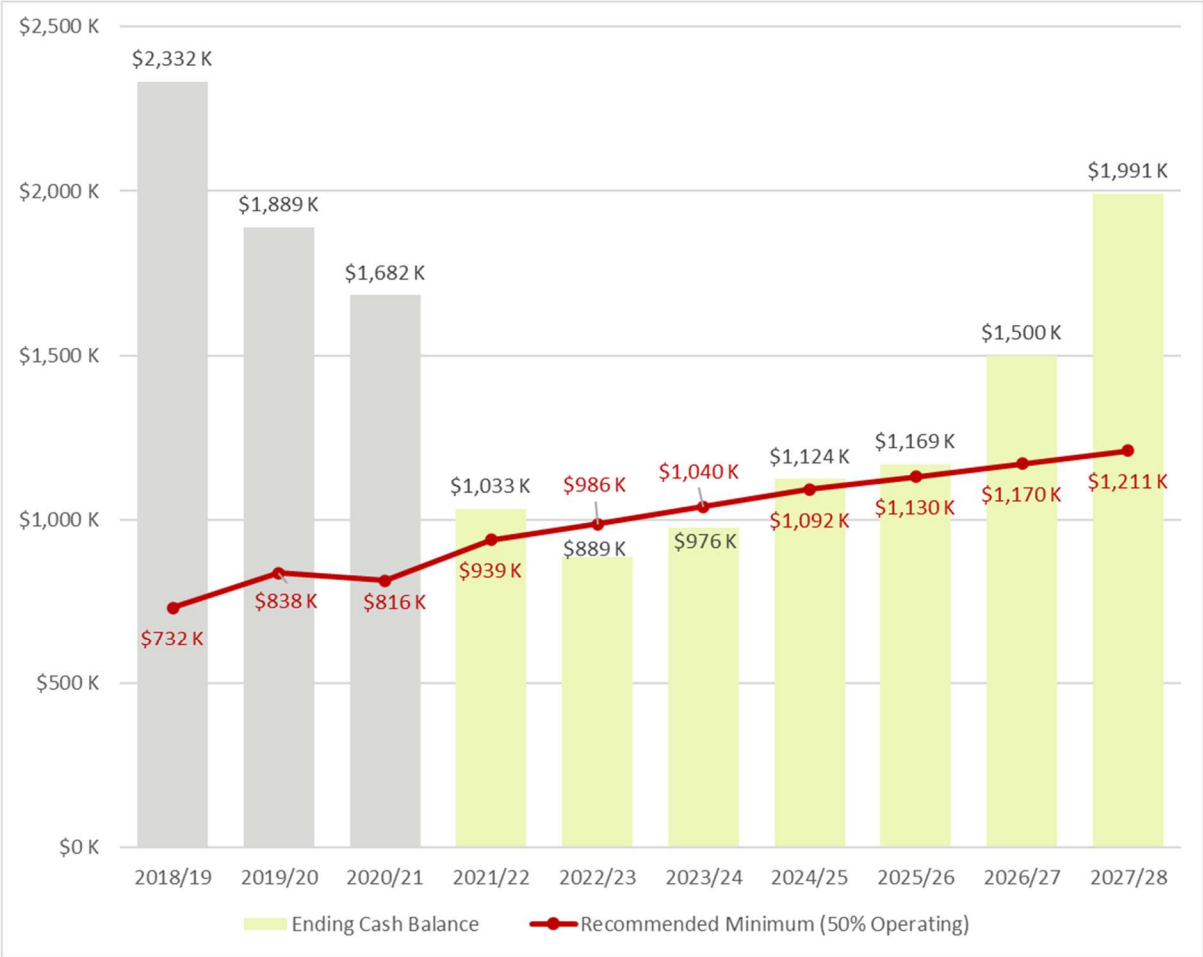
TABLE 1-3: PROPOSED RATES SUMMARY

Category	Current Rates	Proposed Rates
	2021/22	2022/23
Residential equivalent unit charge (quarterly)	\$90.00	\$120.00

1.4 Cash Position Summary

The cash & investments balance for the authority is currently around 7 months of cash operating expenses (net of depreciation). This is above our recommended minimum balance of 6 months of cash operating expenses on hand for the authority’s sewer fund. Over the forecast period, the cash balance consistently increases. The forecast estimates the ending cash balance to be slightly less than 10 months of cash operating expenses due to significant cash-funded capital improvement investments.

TABLE 1-4: SCHEDULE OF ACTUAL AND ESTIMATED ENDING CASH BALANCE



Information and Assumptions

A significant effort has been made by the authority to inventory assets, evaluate the infrastructure, and determine asset criticality. The result is the identification of asset investment cost by project and by year. The rate study covers a 10-year forecast period to take this asset evaluation into account. The rate study is a four-step process: 1) historical comparison with audits and budgets, 2) test year, or normalized budget year, along with inflation assumptions for purposes of forecasting, 3) proof of rate to revenue for reliance on customer data, and 4) cash flow forecast including revenue, operating expense, capital spending, debt, and fund balance (i.e., actual cash and investment balance). The analysis is a “cash basis” approach as described in the AWWA Manual of Rate Making Practices.

Key information

- Audited comprehensive annual financial statements for FYE 2019, FYE 2020, FYE 2021.
- Actual revenue and expenditure report for FYE 2019, FYE 2020, FYE 2021.
- Budgeted revenue and expenditure report for FYE 2022.
- Sewer fund cash balance as of March 31, 2021, provided by the authority.
- CIP provided by Wightman.

Key Assumptions

- Rates should not only cover the system costs, but also support future system maintenance, capital improvements, and debt service payments.
- The authority will follow AWWA guidelines.
- The authority is not anticipating significant population growth.
- The budgeted amount for other revenue in FYE 2021 will be consistent in future years.
- The authority will conduct all capital improvement projects forecasted by the authority.
- The current market rate is used for calculating proposed bond debt service.
- The cashflow analysis is accounting for a slight increase in users per the authority’s data until 2023/2024.

Revenues

2.1 Customers

The authority serves roughly 4,875 residential equivalent units that are charged a quarterly residential equivalent unit charge. The table below shows the breakout of residential equivalent units by fiscal year and projected growth in customers served by the authority between fiscal year 2021/22 and fiscal year 2023/24.

TABLE 2-1: CUSTOMER COUNTS BY METER SIZE

Fiscal Year	REU Count
2021/22	4,875
2022/23	4,914
2023/24	4,953
2024/25	4,953
2025/26	4,953
2026/27	4,953
2027/28	4,953

2.2 Rates

The authority bills customers based on generally accepted methods. Customers are billed a quarterly residential equivalent unit charge. The number of customers billed at the current rates ties to the revenue reflected in the audit and budget, such that we can rely on these numbers for forecasting. The table below shows the current quarterly residential equivalent unit charge rate for sewer customers.

TABLE 2-2: QUARTERLY RESIDENTIAL EQUIVALENT UNIT CHARGE

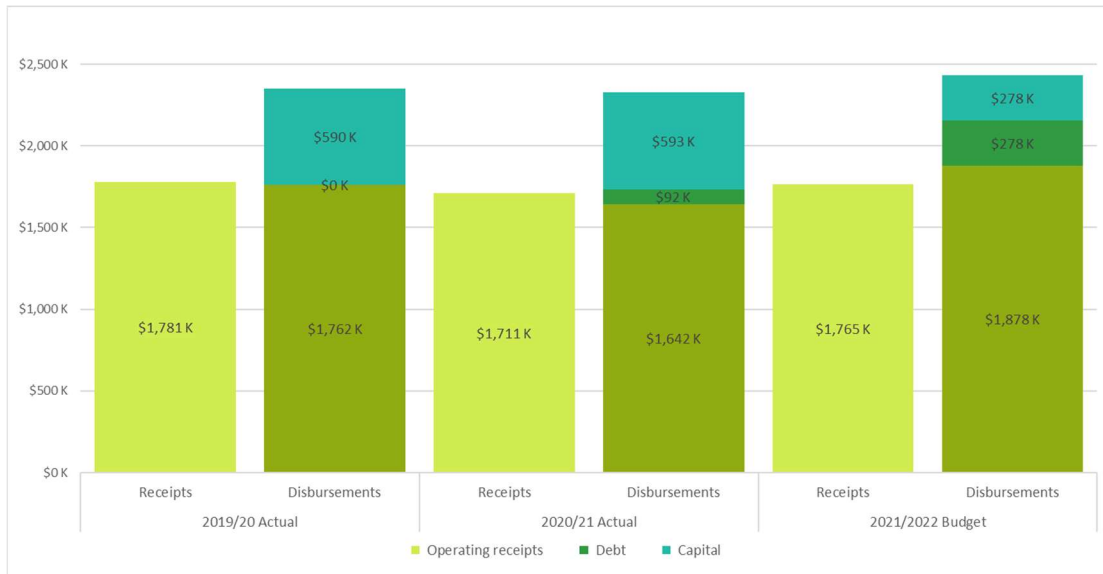
Residential equivalent unit charge (quarterly)		
Fiscal Year	Rate	REU Count
2021/22	\$90.00	4,875
2022/23	\$120.00	4,914
2023/24	\$129.00	4,953
2024/25	\$138.00	4,953
2025/26	\$147.00	4,953
2026/27	\$156.00	4,953
2027/28	\$165.00	4,953

Operating & Maintenance Expenses

3.1 Historical Expenses

Historical expenses are analyzed in the report to help look for trends and to help identify any outlier expenses. The authority’s current year budget is consistent with previous years, with most expenses increasing slightly year over year.

Table 3-1: Receipt and Disbursement History



3.2 Test Year

A test year is a normalized year for operating and maintenance expense and becomes the base year used for forecasting future expenses.

Prior year budget actuals are analyzed for trends, outliers, or one-time expenses. Any items of concern were discussed with authority officials to determine what a particular line-item expense would be in a normal year. Certain adjustments were made to these line items to reflect a normalized year’s expense more accurately to be used in the test year before forecasted out into future years.

3.3 Inflation Assumptions

The next step is to increase the test year expenses by an annual inflationary percentage. This is done as expenses cannot be expected to be the same as they are today over the 10 years forecasted in the report. These annual inflationary increases reflect the increases in costs over time and are used to help estimate what future operating and maintenance expenses will be. The table below summarizes the general inflationary assumptions used in the report.

TABLE 3-3: INFLATION ASSUMPTIONS

Expense Type	Inflation Assumptions
Compensation Related	3.5%
Benefits	3.5%
Operating	3.5%
Purchasing	3.5%
Materials & Utilities	3.5%
Contractual Services	3.5%

Capital Improvement Plan

4.1 Capital Improvement Plan (CIP)

Capital improvements are larger, one-time expenses that are not included in annual operating and maintenance expenses. It is beneficial to look at potential capital improvements well in advance and develop a capital improvement plan as it will help the authority develop policy to manage rates over time to maintain the system with the most efficient use of funds. The authority's capital improvement plan includes project plans for proactively maintaining the entire system. The plan includes a one-time purchase of a grinder pump for an estimated cost of \$344,000 in fiscal years 2022/23 and 2023/24, and our cash flow analysis includes estimated reimbursements for the purchase of the grinder pump.

The capital improvement plan estimated costs were provided by the authority with built in inflation and contingency assumptions. A list of capital improvement costs by year is shown in table 4-2.

4.2 CIP Funding

The authority currently plans to utilize cash funds and debt services for the Capital Improvement Plan. The chart below details the City's plans to use cash and debt services to fund capital improvements.

TABLE 4-2: CAPITAL IMPROVEMENT PROJECTS FUNDING SUMMARY

Year	Cash Funded Capital Improvements	Grinder Pump	Total
2021/22	\$278,273		\$278,273
2022/23	308,699	\$230,480	539,179
2023/24	282,299	113,520	395,819
2024/25	289,099		289,099
2025/26	492,822		492,822
2026/27	306,899		306,899
2027/28	334,240		334,240
Total	\$2,292,331	\$344,000	\$2,636,331

Debt Service

5.1 Debt Limitation

The authority is subject to the State of Michigan debt limitation of 10% of State Equalized Value (SEV), however, Act 94 of 1933 allows communities to issue bonds secured by the revenues of the system and because the security is system revenues (as opposed to the authority's taxing ability) these bonds do not count towards the debt limit. Since the authority can issue bonds under Act 94 of 1933, the 10% of SEV debt limit is not a concern related to the sewer fund utilizing debt to finance projects.

5.2 Current Debt Service

The authority currently has one bond issue that the sewer fund is contributing towards. The debt service schedule through 2027/28 is outlined below.

TABLE 5-2 SEWER FUND SCHEDULE OF COMBINED DEBT SERVICE

Year	Debt Service Payments
2021/22	\$257,769
2022/23	288,480
2023/24	288,480
2024/25	122,844
2025/26	122,844
2026/27	122,844
2027/28	60,861
Total	\$1,264,122

Cash Flow

6.1 Methodology

The revenue needs to support operations, debt, and capital improvements while solving to cash balance. Authority officials determined that a one-time increase followed by a consistent rate track with manageable annual increases is the best option for their customer base. The one-time increase is implemented to assist in the systems immediate needs and the consistent increases per-year will allow the authority to pay for preventative maintenance and capital costs as needed in the future.

6.2 Proposed/Potential Rates

The rate track below demonstrates a one-time increase of \$30.00 to the authority’s residential equivalent unit charge as well as a \$9.00 increases per-year to all rates thereafter.

TABLE 6-2: PROPOSED RATES ADJUSTMENTS

Adjustment	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Residential equivalent unit charge (quarterly)	\$90.00	\$120.00	\$129.00	\$138.00	\$147.00	\$156.00	\$165.00

GULL LAKE SEWER AND WATER AUTHORITY

Appendix A **Comparative Detail
of Operating Expenses**



GULL LAKE SEWER AND WATER AUTHORITY (MICHIGAN) SEWER FUND

COMPARATIVE DETAIL OF OPERATING EXPENSES

	Fiscal Year Ended				Test Year	Multiplier	
	3/31/2019	3/31/2020	3/31/2021	3/31/2022			
	(------Per Client-----)						
Operating Expenses							
500	Wages	\$395,990	\$424,480	\$465,757	\$477,744	\$477,744	3.50%
505	Overtime	20,581	30,040	24,921	26,000	26,000	3.50%
525	Social Security (Employer's Share)	30,903	33,931	36,873	38,536	38,536	3.50%
530	Hospitalization - Full-Time Benefit	58,117	60,954	68,131	76,710	76,710	3.50%
531	Other Non PA 152 Costs	5,423	5,841	6,285	7,013	7,013	3.50%
535	Life Insurance	466	448	496	496	496	3.50%
540	Retirement	37,680	41,453	44,282	44,100	44,100	3.50%
545	Disability	2,516	2,685	2,953	3,114	3,114	3.50%
550	Publications/Printing/Record	1,099	2,722	2,681	3,000	3,000	3.50%
555	Postage	6,108	6,131	5,261	7,000	7,000	3.50%
560	Office Supplies	1,957	1,672	1,937	3,000	3,000	3.50%
565	Utilities: Electric & Natural Gas	68,161	70,476	74,367	75,000	75,000	3.50%
575	Collections O & M	26,649	61,763	46,992	41,662	41,662	3.50%
580	O & M Radio	1,360	2,726	-	4,500	4,500	3.50%
585	General Maintenance	21,686	17,641	22,282	25,000	25,000	3.50%
590	Audit	7,500	7,500	7,800	8,100	8,100	3.50%
595	Legal	3,420	10,879	12,061	12,000	12,000	3.50%
600	Dues/Education/Subscription	5,561	3,289	3,856	5,000	5,000	3.50%
605	Engineering Services	19,536	17,215	28,842	30,000	30,000	3.50%
610	Fuel (Gasoline & Diesel)	13,905	13,636	11,429	14,000	14,000	3.50%
615	Miscellaneous	8,000	5,600	1,234	-	-	0.00%
620	Telephone	10,960	13,801	12,935	15,000	15,000	3.50%
630	Mileage/Travel/Conferences	8,985	10,803	2,961	7,500	7,500	3.50%
650	Sewer Back-Up Fund Set-Aside	3,000	3,000	3,000	3,000	3,000	3.50%
655	Insurance/Worker's Comp/Unemployment	14,789	24,885	24,847	28,000	28,000	3.50%
670	Con.Ser/Frei/Bk/Lab/Gar	80,173	91,978	84,015	119,950	119,950	3.50%
670.2	Charleston AMP + Reimb	(18,759)	10,608	(18,332)	-	-	0.00%
670.3	Galesburg	-	(33,610)	(40,369)	-	-	0.00%
675	Treatment Charges	579,924	667,685	662,644	767,650	767,650	[1]
675.1	Sump Pump Payments	-	-	1,000	-	-	0.00%
685	Authority Meetings	3,100	2,700	2,150	3,375	3,375	3.50%
686	Regional Comm. Membership Dues	16,104	16,104	16,104	16,104	16,104	3.50%
701.001	WGLD Sewer Relocation		48	-	-	-	0.00%
705	Repair & Replacement	28,326	46,850	12,097	15,000	15,000	3.50%
745	Gilmore Farms Sanitary Sewer	140	86	(336)	-	-	0.00%
	Total Operating Expenses	\$1,463,361	\$1,676,019	\$1,631,153	\$1,877,554	\$1,877,554	

[1] Per client. Assumes 14% increases for fiscal years 2022/23, 2023/24 and 2024/25, then 3.5% increases thereafter.

GULL LAKE SEWER AND WATER AUTHORITY

Appendix B **Cash Flow Analysis**



GULL LAKE SEWER AND WATER AUTHORITY (MICHIGAN) SEWER FUND

CASH FLOW ANALYSIS

	<u>2021/22</u>	One-Time Increase	<u>2022/23</u>	Increases Per Year	<u>2023/24</u>	<u>2024/25</u>	<u>2025/26</u>	<u>2026/27</u>	<u>2027/28</u>
Assumptions									
Residential equivalent units billed	4,875		4,914		4,953	4,953	4,953	4,953	4,953
Residential equivalent unit charge (quarterly)	\$90.00	\$30.00	\$120.00	\$9.00	\$129.00	\$138.00	\$147.00	\$156.00	\$165.00
Revenues									
Residential equivalent unit charge	\$1,755,000		\$2,358,720		\$2,555,748	\$2,734,056	\$2,912,364	\$3,090,672	\$3,268,980
Connection charges	-		115,245		115,245	-	-	-	-
Other	9,500		9,500		9,500	9,500	9,500	9,500	9,500
Total revenues	<u>1,764,500</u>		<u>2,483,465</u>		<u>2,680,493</u>	<u>2,743,556</u>	<u>2,921,864</u>	<u>3,100,172</u>	<u>3,278,480</u>
Less: Total operating expenditures	<u>(1,877,554)</u>		<u>(1,972,459)</u>		<u>(2,080,325)</u>	<u>(2,184,334)</u>	<u>(2,260,786)</u>	<u>(2,339,914)</u>	<u>(2,421,811)</u>
Net operating revenue	(113,054)		511,006		600,168	559,222	661,078	760,258	856,669
Less: Current debt service payments	(257,769)		(288,480)		(288,480)	(122,844)	(122,844)	(122,844)	(60,861)
Estimated cash-funded capital improvements	(278,273)		(308,699)		(282,299)	(289,099)	(492,822)	(306,899)	(334,240)
Estimated new grinder pump purchases	-		(230,480)		(113,520)	-	-	-	-
Add: Estimated new grinder pump reimbursements	-		172,000		172,000	-	-	-	-
Net cash flow	<u>(\$649,096)</u>		<u>(\$144,653)</u>		<u>\$87,869</u>	<u>\$147,279</u>	<u>\$45,412</u>	<u>\$330,515</u>	<u>\$461,568</u>
<i>Cash & investments</i>	<i>\$1,682,254</i>	<i>\$1,033,158</i>	<i>\$888,505</i>		<i>\$976,374</i>	<i>\$1,123,653</i>	<i>\$1,169,064</i>	<i>\$1,499,580</i>	<i>\$1,961,148</i>