Scio Township,
Washtenaw County, Michigan

Water and Sewer Fund Financial Forecast

(Cash Needs Basis)

Years Ending June 30, 2024 to 2029

Scio Township, Washtenaw County, Michigan

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Plante & Moran, PLLC
P.O. Box 307
3000 Town Center, Suite 100
Southfield, MI 48075
Tel: 248.352.2500
Fax: 248.352.0018
plantemoran.com

Accountant's Report

To the Township Board
Scio Township,
Washtenaw County, Michigan

As requested by Township Management, we have created a Microsoft Excel model the Township may use in setting its water and sewer utility rates. For development of the model, we obtained source documents including the Township's audited financial statements, the Township's budget, and various supporting documents to accumulate historical information about volume of water and sewer purchased and sold, administrative costs, future debt service, and future capital needs of the system. We worked with various Township employees in order to gain consensus regarding the assumptions used in the model to forecast future performance of the system.

The purpose of the model is not just to calculate what the water and sewer rates charged to customers should be to cover costs in a one-year period. Rather, the model calculates, based on management's assumptions, what the rate(s) should be in order to achieve a target level of modified working capital over an extended period of time.

On the following pages, we explain some of the more important or sensitive assumptions and estimates used in the model. Finally, based on the assumptions, we include a summary of the suggested rate changes as calculated by the model.

Management is responsible for making all management decisions regarding the setting of water and sewer rates, including determination of which costs should be borne by ratepayers, and determination of the allocation of costs among fixed and variable charges, when applicable. Moreover, Township management is also responsible for performing all management functions relating to use of the model, including the underlying assumptions and related notes, and for accepting full responsibility for such decisions, even if Plante Moran provides advice as to the assumptions applied or assists in drafting the forecasted financial statements and related notes. Plante Moran disclaims any liability to Scio Township or any third parties for all such management decisions and/or functions, including any management decisions or functions relating to the setting of water and sewer rates.

The following information is intended solely for the information and use of the Township Board and Management and is not intended to be and should not be used by anyone other than these specified parties.

Brian J. Camiller, CPA
Partner

June 11, 2024

Summary of Significant Forecast Assumptions/ Significant Accounting Policies

The assumptions disclosed herein are those that management believes are significant to setting of utility rates as of the date of this report. The assumptions are not all inclusive, and the calculated results may not be attained. Management intends for the model to indicate the cash inflows and outflows of the system and the user charge levels necessary to cover the cash outflows and to accumulate reserves for future capital needs and for adequate working capital.

All revenues and expenditures are reported using the cash-needs basis, which differs from generally accepted accounting principles that are used for historical audited financial statements. Under the cash needs basis, revenue is recognized when it is received in cash, and expenditures are recorded when there is a cash outflow. Scio Township's (the "Township") historical audited financial statements would not report capital outlay or principal payments on debt as expenses of the Water and Sewer Fund. Instead, capital purchases would be capitalized on the balance sheet and depreciated over the asset's useful life, and principal payments would be shown as a reduction to the debt liability.

The operational and administrative revenue and expenditures are based off of the Township's audited trial balances for the fiscal years ended March 31, 2022 and 2023 and the Township's final amended budget for fiscal year 2024. Assumptions are based on management's judgment given the most recent and best information known at the time of completion, which was June 11, 2024.

Significant assumptions include the following:

- The model calculates operations on a cash basis so as to provide an analysis of revenue projected to work toward a target reserve that includes replacement costs of capital assets, 120 days of operating expenses, annual debt service, emergency capital replacement, and planned future capital replacement.

- Beginning modified working capital is based on actual balances in the Water and Sewer funds per the audited 2023 financial statements.

- Water and Sewer system internal operational expenses are allocated by the Township between water and sewer activities, using funds 590 and 591. No further analysis to determine the adequacy of the existing allocation has been performed.

- All debt service payments, principal and interest, of the 2008 DWRF and 2012 DWRF water bonds agree to the Township's audited financial statements. In addition, an estimated debt service schedule for an additional $10.2 million DWRF loan (Sewer) has been included under the assumption the Jackson Road Pump Station Upgrades (wet well expansion) project will be performed during FY27 and FY28. That loan will be repaid over 20 years. From 2025 through 2029, the Township assumes it will pay $1.9 million for water debt and $1.5 million for sewer debt, respectively.

- All other capital outlay, including system improvements, repairs, and replacements to the system, will be paid out of current cash flow. Significant capital outlay assumed in the model includes the following:

  Water

  - Jackson Road pump station upgrades
  - Jackson Road valve meter pit
  - Water tower improvements
  - Security cameras
  - Water reliability study update
  - Others

Sewer

- Cleaning/televising
- Manhole/pipe lining
- Pump station generator
- ARV repair/replacement
- Pump station evaluation/metering study
- Others

Projects split 50/50 between Water and Sewer

- Water meter replacement
- Utility department vehicles
- GIS updates
- Engineering standards updates

From 2025 through 2029, the forecast includes approximately $2.4 million for water and $17.7 million for sewer.

If additional large-scale improvements to either system are identified in the future, the calculated rates below will not provide sufficient working capital in order to achieve targeted levels. Another source of funding, such as additional bonds or other issuances of debt, would be required at some time in the future to accomplish additional projects.

- Purchase of other miscellaneous equipment will be funded by water and sewer rates annually.
- Operational expenses with their own specific annual inflation factor are as follows:
  - Wages - 5 percent per year
  - Health care – 6.6 percent per year
  - Utilities – 2.5 percent per year
  - Insurance – 2.5 percent per year
- The health care assumption is based on an estimate from the Centers for Medicare & Medicaid Services (CMS.gov).
- For operating and administrative expenses without a separate assumption, a 2.5 percent inflationary increase has been assumed.
- The Township bills its customers four times per year.

- The Township buys its water from the City of Ann Arbor ("AA"). Water units purchased and sold fluctuate based on weather and demand. Actual water units (gallons) purchased and sold over the prior five years are as follows:

	Water Units	
	Purchased	Sold
FY 2019	338,656,084	318,118,000
FY 2020	321,501,813	291,507,881
FY 2021	339,513,000	295,536,640
FY 2022	324,699,320	287,316,000
FY 2023	324,259,496	250,758,000

For purposes of the model, the volume of water to be purchased from AA in FY2025 is approximately 330 million gallons. In subsequent years, the model assumes resident demand will grow 4 percent per year due to increasing population and additional building development.

The difference between water purchased and water sold is referred to as "water loss." Water loss is a normal component of providing water service, as all systems lose some amount of water due to system leaks; water main breaks; unmetered usage, such as fighting fires or system flushing; and other situations. From 2019 to 2023, water loss increased from 6.1 percent to 22.7 percent. The Township has not identified the cause of this increase, but is optimistic that it will decrease with additional capital repairs and replacements For the purpose of the model, the Township has assumed an average of 15 percent going forward.

The cost of water purchased is the third primary assumption related to the City of Ann Arbor. Through FY22, AA billed the Township strictly on a commodity (per unit) basis. In FY23, AA transitioned to a two-tiered approach to billing its wholesale municipal customers like the Township: first, a monthly fixed amount and second, a volume-based charge for the water that flows through the master meter and into the Township. Since 2019, the charges from AA have been as follows:

	Water Commodity Rate (per 1,000 gallons)	Water Monthly Fixed Fee	Effective Rate Increase
FY 2019	5.87	$ -	
FY 2020	6.88	$ -	17.3%
FY 2021	7.11	$ -	3.3%
FY 2022	6.55	$ -	-8.0%
FY 2023	6.93	$ 10,432	11.7%
FY 2024	8.24	$ 8,922	17.1%

Over the prior five years, the average rate increase has been 7.8 percent per year. For the purpose of the model, the Township has assumed the cost of purchasing water from AA will continue to go up 7.8 percent per year.

The Township also contracts with the City of Ann Arbor for sewer treatment. The volume of sewage treated is a combination of sanitary sewage inserted into the sewer system by customers plus some amount of infiltration. Infiltration is groundwater that leeches into the sewer system through cracks, leaky pipe joints, connection failures, and deteriorated manhole covers. Not all water purchased by customers ends up in the sewer system, as some percentage of water purchased is used for exterior irrigation and is absorbed by the ground.

The Township bills for sewer based on the number of water units measured by the customer's meter. Total sewer treatment expenses paid by the Township over the past five years, and the annual increase (decrease) is as follows:

	Sewer Treatment Expense	Sewer Units Sold	Cost per unit sold (thousand gallons)	Units sold as a percentage of water units
FY 2019	$ 2,085,089	258,454,000	$ 8.07	81.2%
FY 2020	$ 2,091,996	249,783,769	$ 8.38	85.7%
FY 2021	$ 2,256,790	242,663,348	$ 9.30	82.1%
FY 2022	$ 2,131,003	264,919,000	$ 8.04	92.2%
FY 2023	$ 2,025,011	217,280,000	$ 9.32	86.6%

Water units sold exceed sewer units sold due to water-only customers and irrigation meters The model assumes sewer units sold will be 86% of water units sold based on the last five years. The cost of sewer treatment has increased by 6 to 7 percent per year. The model assumes 6.3 percent annual increases going forward.

- The target modified working capital (current assets minus receivables minus current liabilities) can be broken down into four components as follows:

    1. 120 days of internal operational expenses (30 days more than the Township's 90 day billing cycle)

    2. The next year of debt service payments

    3. A total of 2 percent of the net book value of the system's capital assets in the event of an emergency capital replacement

    4. At the end of five years, for planned future capital projects, Water sets aside $500,000 and Sewer sets aside $5M.

- In total, over the five years of the model, Water's working capital decreases by approximately $1.2 million. For sewer, the decrease is $7 million. The sewer decrease is entirely due to the significant capital projects planned for the next 5 years. Sewer is planning for over $17 million in capital projects while obtaining external financing for only $10 million of that. This does not place the Sewer Fund in any kind of peril. The Township has been accumulating funds over the years to eventually be spent on capital projects in this manner.

Additional Fixed Charges

In addition to the water and sewer commodity rates, the Township also charges its customers a few fixed charges, including the following:

- Water Readiness to Serve (RTS)
- Sewer Readiness to Serve (RTS)
- Water Debt

These fixed charges vary by a customer's water meter size.

Currently, both RTS charges annually generate approximately $300,000 each. The Water Debt charge generates approximately $540,000 annually. For the purposes of the model, the total revenue generated from these charges does not change, i.e. these remain "frozen" for the next five years while all necessary rate increases are passed through the commodity (variable) rate per unit sold. This allows for an easier "apples to apples" comparison between the current and model-suggested rates.

A few additional comments about these fixed charges:

- The $540,000 generated by the Water Debt charge is in excess of the Water Fund's annual debt service payments going forward. We did not do any analysis of prior years to determine when, if ever, the Debt charge was established to only cover the water debt.
- There does not seem to be a planned methodology related to the RTS charges. The Water RTS pays for approximately 30 percent of Water's administrative costs, while the Sewer RTS pays for approximately 19 percent of Sewer's administrative costs.
    - If the Township wants to begin increasing the RTS charges, we recommend developing a policy whereby the RTS is somehow "tie barred" to administrative expenses. For example, adjust the RTS every year to provide for X percent of budgeted administrative expenses.
- All 3 fixed charges are graduated based on meter size, i.e. a customer with a 1.5-inch meter pays more than a customer with a 1-inch meter. A customer with a 2-inch meter pays more than the customer with a 1.5-inch meter, and so on. However, the rate at which these charges escalate from one meter size to the next is not consistent with recommendations from the American Water Works Association (AWWA).
    - If the Township converted these charges to follow the AWWA recommendations, the RTS would decrease for 80 percent of the System's customers while it would increase for the other 20 percent.
    - For the debt charge, following the AWWA recommendation would do the opposite as that of the RTS charges. 20 percent of the customers would pay less while 80 percent of the customers would pay more.
    - Changing all 3 fixed charges would essentially net to no change for the City's residential customers.

- We did note a single customer – the Township's only 8-inch meter – did not have its debt charge adjusted in 2021 when the rest of the charges were revised. This resulted in the 8-inch meter customer paying substantially less than we would have expected and less than the smaller 3-inch, 4-inch, and 6-inch meter customers. We recommend adjusting the charge for this one customer to properly align with the other charges.

- We recommend the Township analyze this issue in the following year and make any adjustments as of April 1, 2025.

Results from the Model calculations

- In an early draft version of the model, the calculated annual increases to the commodity rates were 7.6 percent for Water and 10.4 percent for sewer. After discussion with Township management, the consensus opinion was that these annual rate increases were not realistic for the current or future board to approve every year.

- As a result, the model was adjusted to have a larger, more significant rate increase in the first year, followed by four years of 5 percent raises. We informally refer to this type of rate adjustment as a "kickstart" or "tear the band-aid off" adjustment.

- The model proposes the following changes to the Township's water and sewer commodity rates (per 1,000 gallons):

	Current	**FY25**	**FY26**	**FY27**	**FY28**	**FY29**
Water	$ 8.87	$ 12.46	$ 13.08	$ 13.73	$ 14.42	$ 15.14
Sewer	10.42	12.86	13.51	14.18	14.89	15.63
Total for 1 unit of water and sewer	$ 19.29	$ 25.32	$ 26.58	$ 27.91	$ 29.31	$ 30.77
% increase		31%	5%	5%	5%	5%

- In this revised version of the model, the first-year increases were 40 percent for water and 23 percent for sewer; however, the actual impact the customers will experience is heavily dependent on the volume of water/sewer purchased. Since the fixed charges noted above are such a significant portion of the total utility bill, increasing just the variable charges has a far less significant impact on average or even above-average residential customers of the system.

    - For example, an "average" residential customer will use approximately 14 units of water/sewer per quarter. This customer would see a 24 percent increase to their total utility bill in the first year, followed by annual increases of 4 percent. That is equivalent to a $83 increase per quarter in the first year, followed by **annual increases of $20 or less per quarter for the next four years.**

Summary of Significant Forecast Assumptions/ Significant Accounting Policies

Township "average" resident (3/4" line)		Actual 2024	Forecast 2025	Forecast 2026	Forecast 2027	Forecast 2028	Forecast 2029
Average User Water/Sewer bill							
Average customer uses	55 units per year						
Ready to serve - Water		$ 103.76	$ 103.76	$ 103.76	$ 103.76	$ 103.76	$ 103.76
Ready to serve - Sewer		$ 103.56	$ 103.56	$ 103.56	$ 103.56	$ 103.56	$ 103.56
Water Debt		$ 118.92	$ 118.92	$ 118.92	$ 118.92	$ 118.92	$ 118.92
Water Variable Charge		$ 486.08	$ 682.58	$ 716.71	$ 752.55	$ 790.17	$ 829.68
Sewer Variable Charge		$ 571.02	$ 704.84	$ 740.08	$ 777.09	$ 815.94	$ 856.74
Total Annual Water/Sewer bill		$ 1,383.33	$ 1,713.66	$ 1,783.03	$ 1,855.87	$ 1,932.35	$ 2,012.66
Total Quarterly Water/Sewer bill		$ 345.83	$ 428.42	$ 445.76	$ 463.97	$ 483.09	$ 503.17
$ increase to annual cost			$ 330.33	$ 69.37	$ 72.84	$ 76.48	$ 80.31
$ increase to quarterly bill			$ 82.58	$ 17.34	$ 18.21	$ 19.12	$ 20.08
Overall effective increase in Water/Sewer average annual user cost		**n/a**	**23.9%**	**4.0%**	**4.1%**	**4.1%**	**4.2%**

- A heavy volume residential customer might use 28 units per quarter. That customer would see a 27 percent increase in the first year, followed by annual increases of 4 to 5 percent. That is equivalent to a $165 increase per quarter in the first year, followed by **annual increases of between $35 and $41 per quarter for the next 4 years**.

High volume resident (3/4" line)		Actual 2024	Forecast 2025	Forecast 2026	Forecast 2027	Forecast 2028	Forecast 2029
Average User Water/Sewer bill							
Average customer uses	110 units per year						
Ready to serve - Water		$ 103.76	$ 103.76	$ 103.76	$ 103.76	$ 103.76	$ 103.76
Ready to serve - Sewer		$ 103.56	$ 103.56	$ 103.56	$ 103.56	$ 103.56	$ 103.56
Water Debt		$ 118.92	$ 118.92	$ 118.92	$ 118.92	$ 118.92	$ 118.92
Water Variable Charge		$ 972.15	$ 1,365.16	$ 1,433.42	$ 1,505.09	$ 1,580.35	$ 1,659.36
Sewer Variable Charge		$ 1,142.03	$ 1,409.68	$ 1,480.17	$ 1,554.18	$ 1,631.88	$ 1,713.48
Total Annual Water/Sewer bill		$ 2,440.42	$ 3,101.09	$ 3,239.83	$ 3,385.51	$ 3,538.47	$ 3,699.08
Total Quarterly Water/Sewer bill		$ 610.11	$ 775.27	$ 809.96	$ 846.38	$ 884.62	$ 924.77
$ increase to annual cost			$ 660.66	$ 138.74	$ 145.68	$ 152.96	$ 160.61
$ increase to quarterly bill			$ 165.17	$ 34.69	$ 36.42	$ 38.24	$ 40.15
Overall effective increase in Water/Sewer average annual user cost		**n/a**	**27.1%**	**4.5%**	**4.5%**	**4.5%**	**4.7%**

If the assumptions detailed above hold true, both water and sewer operations will achieve the target level of modified working capital after the forecasted five years (FY 2025-2029); however, these assumptions should be evaluated every year and the model adjusted accordingly, if necessary.

Model Cash Outflows, Inflows, and Consumption

Water Rate Calculation	Budget	Forecast	Forecast	Forecast	Forecast	Forecast
Fiscal Year Ended	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
Beginning of Year Working Capital	4,431,738	**3,484,912**	**3,192,675**	**2,690,210**	**2,968,273**	**3,145,017**
Units used by customers	313,211	288,647	300,193	312,201	324,689	337,677
Rate Charged	8.87	**12.46**	**13.08**	**13.73**	**14.42**	**15.14**
Sale of Water Total	**2,778,178**	**3,595,349**	**3,926,121**	**4,287,324**	**4,681,758**	**5,112,479**
Ready to Serve Charge	300,000	307,500	307,500	307,500	307,500	307,500
Debt charge	540,000	540,000	540,000	540,000	540,000	540,000
Miscellaneous Other revenue	671,000	658,275	646,632	639,298	627,280	605,587
Total addition to cash	**4,289,178**	**5,101,124**	**5,420,253**	**5,774,122**	**6,156,538**	**6,565,567**
Water Purchase	2,931,022	3,043,753	3,413,697	3,828,605	4,293,941	4,815,836
Admin Costs	1,059,638	1,050,506	1,087,870	1,126,772	1,167,284	1,209,482
Capital improvements	746,562	880,000	1,010,000	172,500	162,500	162,500
Annual debt service	498,782	419,101	411,151	368,181	356,068	322,651
Total use of cash	**5,236,004**	**5,393,361**	**5,922,718**	**5,496,058**	**5,979,794**	**6,510,469**
Net addition (use) of cash	**(946,826)**	**(292,237)**	**(502,465)**	**278,064**	**176,744**	**55,098**
End of Year Working Capital	**3,484,912**	**3,192,675**	**2,690,210**	**2,968,273**	**3,145,017**	**3,200,115**
Target Reserve	2,210,845	2,272,973	2,508,875	2,708,229	2,955,282	3,200,115
Over (Short) of Target Reserve	**1,274,066**	**919,702**	**181,334**	**260,045**	**189,735**	(0) **(0)**

See accompanying summary of significant forecast assumptions/ significant accounting policies and accountant's report.

Model Cash Outflows, Inflows, and Consumption

Sewer Rate Calculation	Budget	Forecast	Forecast	Forecast	Forecast	Forecast
Fiscal Year Ended	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
Beginning of Year Working Capital	14,870,824	**14,898,333**	**14,561,736**	**13,073,990**	**11,399,099**	**9,761,471**
Units used by customers	268,042	247,021	256,902	267,178	277,866	288,980
Rate Charged	$ 10.42	**12.86**	**13.51**	**14.18**	**14.89**	**15.63**
Sale of Sewer Total	**2,793,002**	**3,177,208**	**3,469,511**	**3,788,706**	**4,137,267**	**4,517,896**
Ready to Serve Charge	300,000	307,500	307,500	307,500	307,500	307,500
Proceeds from Debt	-	-	-	5,100,000	5,100,000	-
Miscellaneous Other revenue	1,161,000	1,431,275	1,396,694	1,367,237	1,338,418	1,310,253
Total addition to cash	**4,254,002**	**4,915,983**	**5,173,706**	**10,563,443**	**10,883,185**	**6,135,649**
Sewer Purchase	2,750,000	2,940,026	3,143,184	3,360,380	3,592,584	3,840,833
Admin Costs	1,442,527	1,602,553	1,658,268	1,716,212	1,776,486	1,839,196
Capital improvements	33,966	710,000	1,860,000	6,672,500	6,662,500	1,792,500
Annual debt service	-	-	-	489,243	489,243	489,243
Total use of cash	**4,226,493**	**5,252,580**	**6,661,452**	**12,238,334**	**12,520,812**	**7,961,772**
Net addition (use) of cash	**27,510**	**(336,597)**	**(1,487,746)**	**(1,674,891)**	**(1,637,627)**	**(1,826,123)**
End of Year Working Capital	**14,898,333**	**14,561,736**	**13,073,990**	**11,399,099**	**9,761,471**	**7,935,348**
Target Reserve	13,671,564	12,790,565	11,901,846	11,601,299	10,814,344	7,935,348
						0
Over (Short) of Target Reserve	**1,226,769**	**1,771,171**	**1,172,144**	**(202,200)**	**(1,052,873)**	**0**

See accompanying summary of significant forecast assumptions/ significant accounting policies and accountant's report.