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Wealth Management.

# Scio Township Utility Rate Model

May 22, 2024



# Utility Rate Model

- **“Cash-needs Basis”** – The model sets rates based on anticipated cash needs. Depreciation and accrual accounting is excluded from the model. This method requires the Township to maintain lower cash reserves (and lower utility rates) than it would if rates were set to fund depreciation expense.
- **"Target Working Capital"** – Cash and current assets, net of current liabilities. Categories discussed on later slide.
- **Why 5 Years?** - The model looks at rate increases over a 5-year horizon. Doing this, the Township is able to “smooth out” the rate increases to avoid rate “spiking”. This should provide a level of consistency for the Township’s customers and prevent any unnecessary surprises related to future rate increases.
  - Cruise ship vs. speed boat



# Utility Rate Model Summary

## ➤ 5 Year Model is not a 5 Year Commitment

The model is a “living” tool that should be reviewed and updated every year as part of the budget process, continuously pushing the forecast out another year, always looking 5 years into the future. Because facts and circumstances can change so quickly, the Board should only adopt utility rate increases one year at a time, not for the next 5 years at one time.



# Utility Rate Model Summary (continued)

## Readiness To Serve (RTS) Charge

- As part of its rate structure, the Township charges a monthly fixed charge to its customers in addition to the variable (commodity) rate based. This is referred to as a Readiness To Serve Charge (RTS). The purpose of the RTS is to provide a guaranteed cashflow regardless of how much water is used. The RTS helps pay for operational costs such as Township staff, insurance, accounting, audit, technology, postage, etc... These costs exist whether or not customers use water.
- The Township's RTS charges for both water and sewer generate approximately \$300k each. This is approximately 30% of Water's and 19% of Sewer's operational expenses. For purposes of the models, the RTS is assumed to be frozen for the entirety of the models.
- The RTS can be increased to cover an even larger portion of the Township's operational costs and even some/all of the capital outlay and debt service; however, keep in mind that a higher fixed charge impacts the low-volume users more significantly.



# Utility Rate Model Summary (continued)

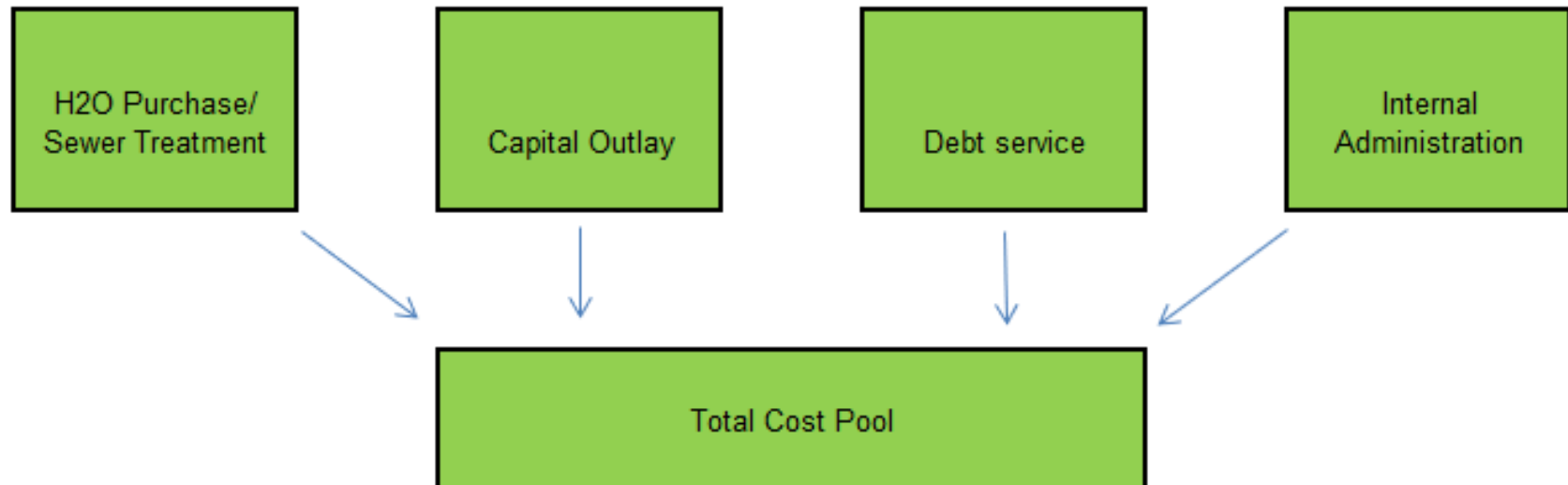
- Scio Township will continue to purchase water from the City of Ann Arbor. No known changes to contract pending.
- Scio Township will continue to pay City of Ann Arbor to provide wastewater treatment. No known changes to contract pending
- The most significant assumption included in the model is related to capital outlay. The model includes the current proposed Township capital improvement plan
  - Water - \$3.1M over 5 years
  - Sewer - \$17.7M over 5 years
    - Of that amount, \$10.2M for Jackson Road pump station upgrades and \$4.1M for ARV repair/replacement
- Debt service – No new debt to be issued for Water in the next 5 years. Sewer will borrow \$10.2M from the State of Michigan Drinking Water Revolving Fund for the Jackson Road pump station noted above. Given the interest rate environment, this is the most prudent method for financing significant capital projects.





# Rate Model – Step 1

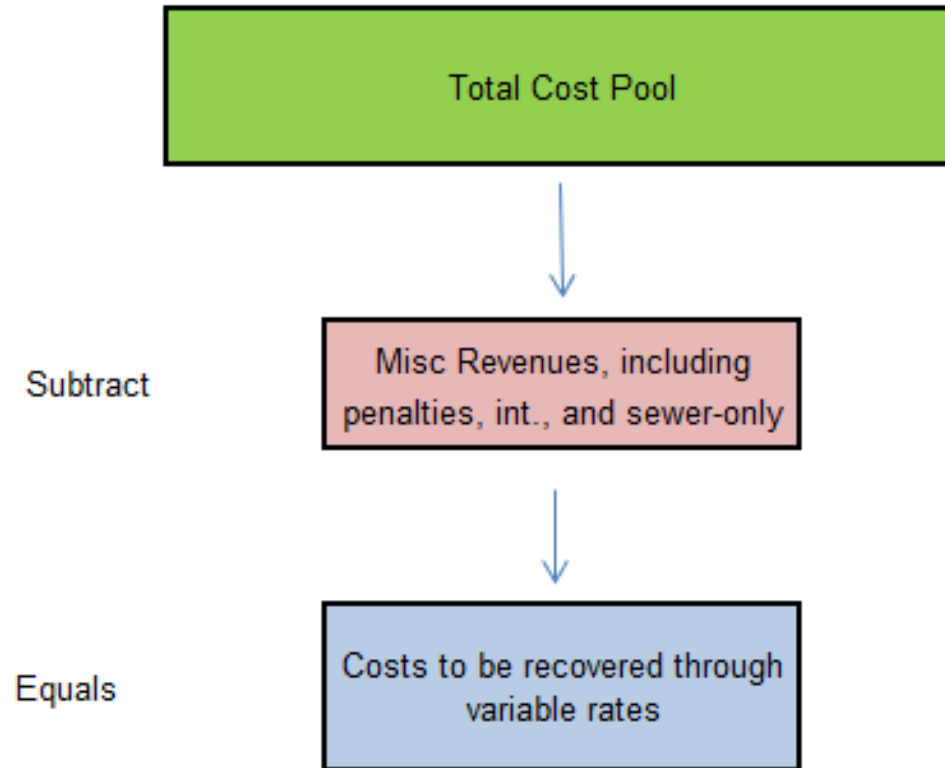
## Calculate the Total Cost Pool





# Rate Model – Step 2

## Calculate costs to be covered by rates





# Rate Model – Step 3

## Calculate the Variable Rate

Equals

Costs to be recovered  
through variable rates



Divide by

Units Sold



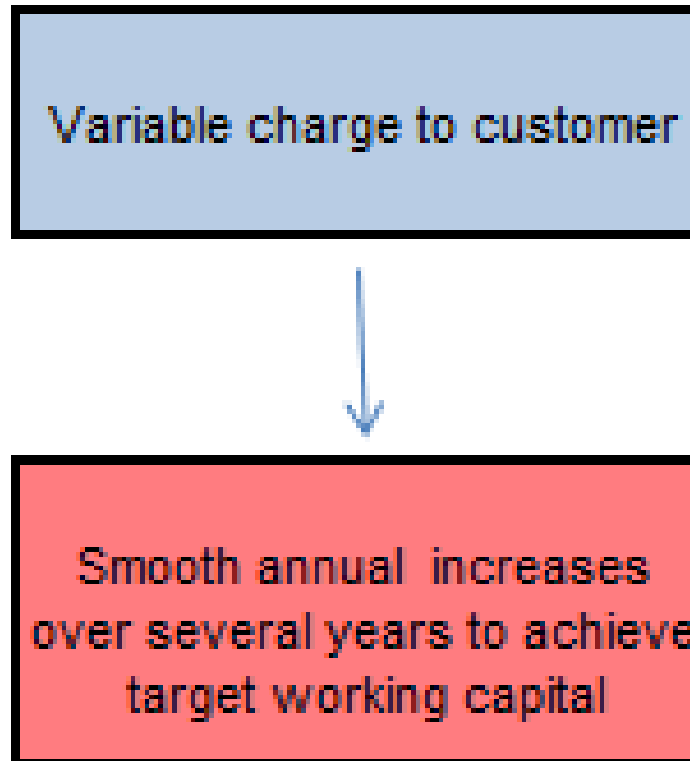
Equals

Variable charge to customer





## Rate Model – Step 4 (Multi-Year Models)





# What is “Target Working Capital”?

- Maintain some amount of cash and current assets (net of liabilities) in the bank at the end of the model.
- 4 “buckets” of working capital
  1. Operating reserve – 120 days
  2. Next year’s debt service payments
  3. Emergency capital replacement – 2% of the NBV of capital assets
  4. Planned capital replacement - \$5M for sewer and \$1.5M for water.
- As of 6/30/23, the Township’s starting working capital (total) is approx. \$4.4M for water and \$14.9M for sewer. After 5 years, the water system will reduce its working capital to \$4.2M and “fill” the 4 buckets noted above. The sewer system will decrease its working capital to \$7.9M based on the calculation of the 4 buckets above.



# Rate Model – Step 1

## Calculate the Total Cost Pool

- Internal Operations – Includes inflationary cost increases over the next 5 years.
- City of AA – 8% water, 6% sewer (annually)
- Capital Outlay
  - Capital outlay has been based on the Township's capital improvement plan.
    - W - \$2.4M, including Jackson Rd valve meter pit and water meter replacement
    - S - \$17.7M, including \$10.2M for Jackson Rd pump station and \$4M for ARV repair/replacement
- Debt Service
  - W - No change
  - S - \$10.2M DWRF loan for pump station



## Rate Model – Step 2

### Calculate costs to be covered by rates - Fixed Charges

- Township charges separate **Readiness To Serve** charges for both W&S based on meter size. Both generate approximately \$300k per year each.
- Some communities will “tie-bar” the RTS to cover a set percentage of administrative costs. The models we have created do not include any such adjustments, but this will remain an option for the Township in future years.
- Although the Township does utilize a graduated scale (a 1.5-inch meter pays more than a 1-inch meter; a 2-inch pays more than a 1.5-inch, etc...), that scale does not follow the recommendations of the American Water Works Association.
- If the Township converted to the AWWA system, approximately 80% of the Township’s customers would see a minor rate decrease while the remaining 20% would see a corresponding increase.



# Rate Model – Step 2

## Calculate costs to be covered by rates

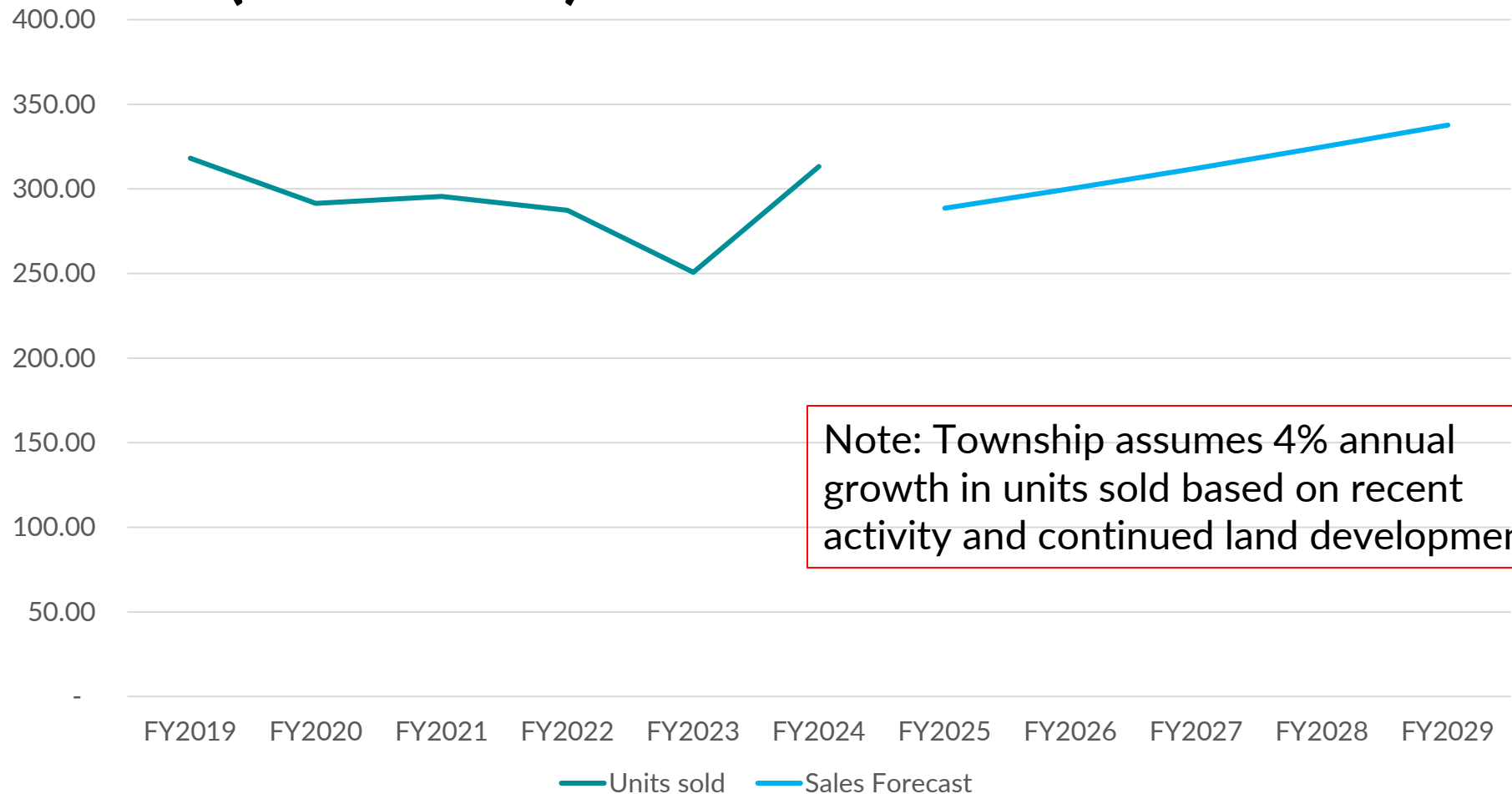
### - Fixed Charges

- The Township also charges its Water customers a **debt charge** based on meter size. The debt charge generates approximately \$540,000 per year. This is greater than the existing debt service; however, the model requires the same amount of total cash inflow regardless of the source. While it probably makes sense to adjust this charge to approximate the actual debt service in a year, the result would be a higher variable rate to compensate for the lost revenue.
  - Like the RTS, the debt charge does not follow the AWWA recommendation
  - Unlike the RTS, if the AWWA was followed, 20% of the customers would see a minor decrease while the other 80% would see an increase
  - The Township adjusted last adjusted the debt charge in 2021, but inadvertently missed adjusting the 8-inch meter charge. That charge should be increased to pay ratably more than the 6-inch meter. This only affects 1 customer.
- The Sewer customers do not currently pay a separate debt charge as the Township has not had any sewer debt recently. With the 2027 DWRF sewer bond, the Township will have the option of implementing a sewer debt charge then.



# Rate Model – Step 3

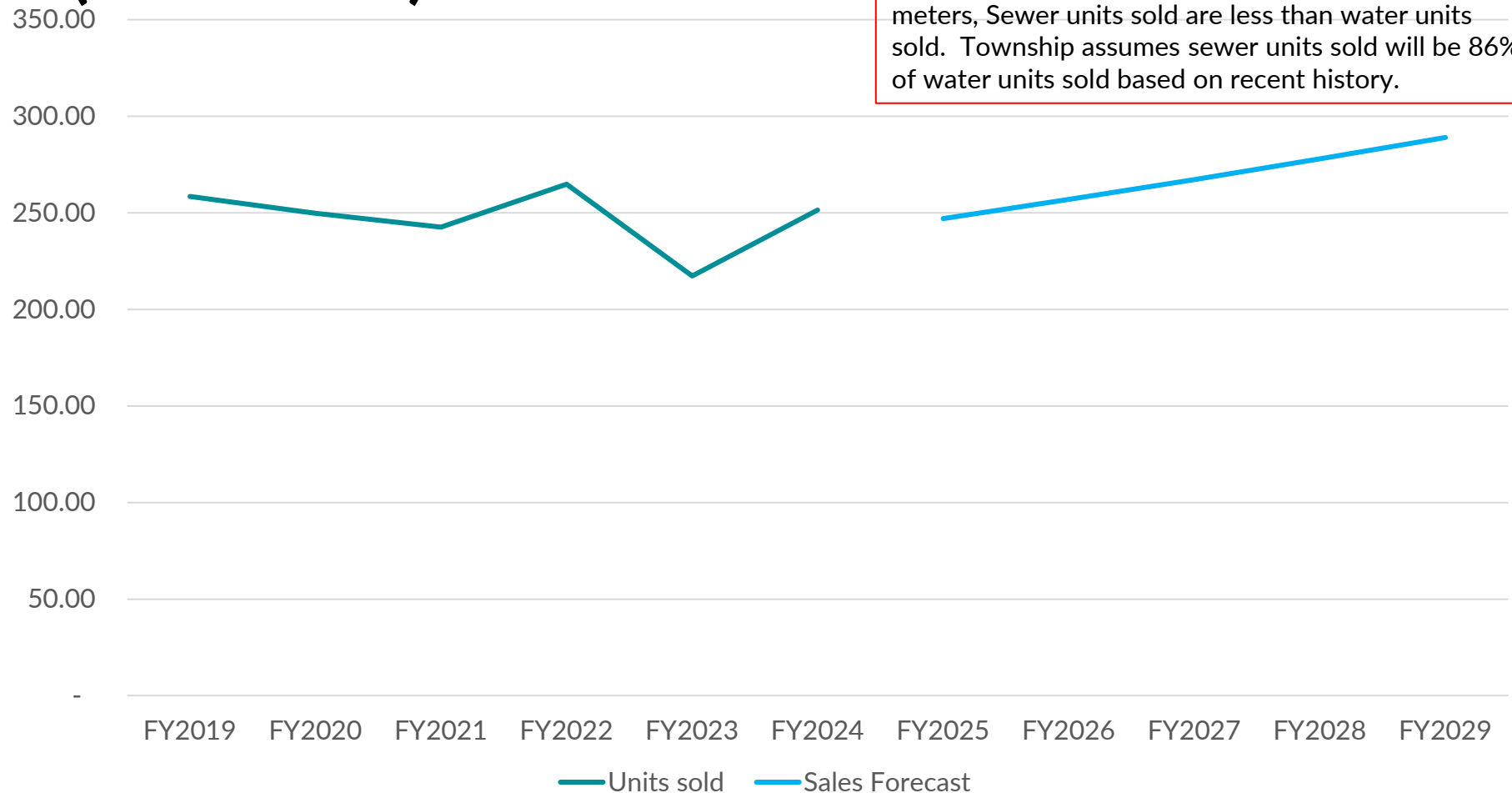
## Calculate the Variable Rate – Water Units Sold (in millions)





# Rate Model – Step 3

## Calculate the Variable Rate – Sewer Units Sold (in millions)







# 10 Years of Scio Rate Increases

Although the Township began raising utility rates more frequently in recent years, prior increases were few and far between. Since 2014, these are the only increases to the Township's utility rates:

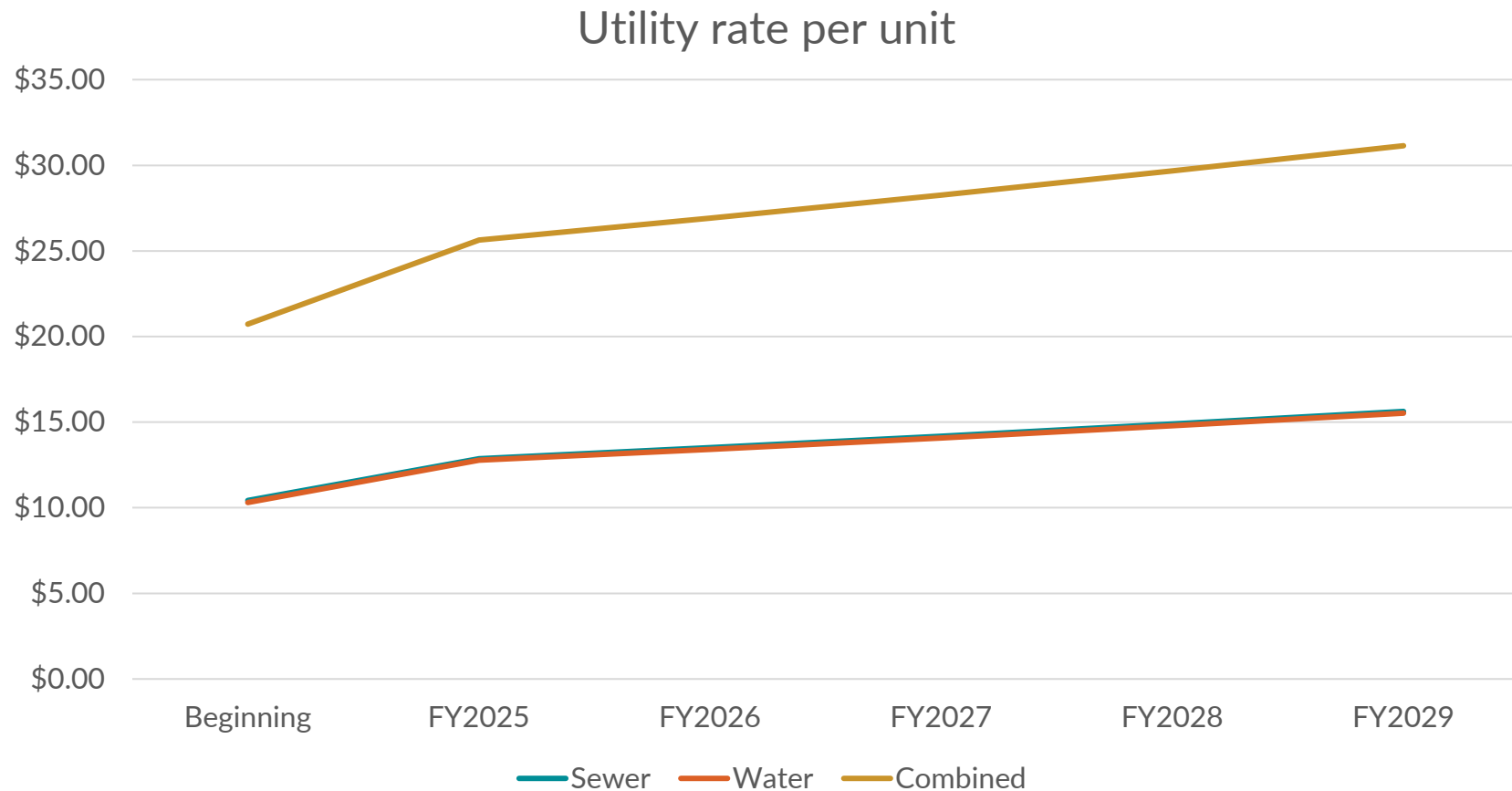
Fee	Years raised	Other changes/notes
Sewer RTS	2014	<ul style="list-style-type: none"><li>• In 2021, a separate charge was implemented for 1.5" meters.</li><li>• A separate charge for ¾" meters was implemented in 2024.</li></ul>
Water RTS	2014	<ul style="list-style-type: none"><li>• None since 2014</li></ul>
Water Debt	2014, 2021	<ul style="list-style-type: none"><li>• 2021 increases ranged between 95 and 444 percent.</li></ul>
Sewer (volume)	2019, 2021, 2022	<ul style="list-style-type: none"><li>• Unclear when rate was increased prior to 2014. No increases between 2014 and 2019.</li><li>• Increase from 2019 to the current rate is only 5.7%</li></ul>
Water (volume)	2019, 2021, 2022	<ul style="list-style-type: none"><li>• Unclear when rate was increased prior to 2014. No increases between 2014 and 2019.</li><li>• Increase from 2019 to the current rate is only 8.4%</li></ul>



# Proposed Rate Changes

Water rate (orange) increases 23.9% in year one, but a 5% annual rate increase thereafter.

Sewer rate (green) increases 23.4% in year one, but a 5% annual rate increase thereafter.

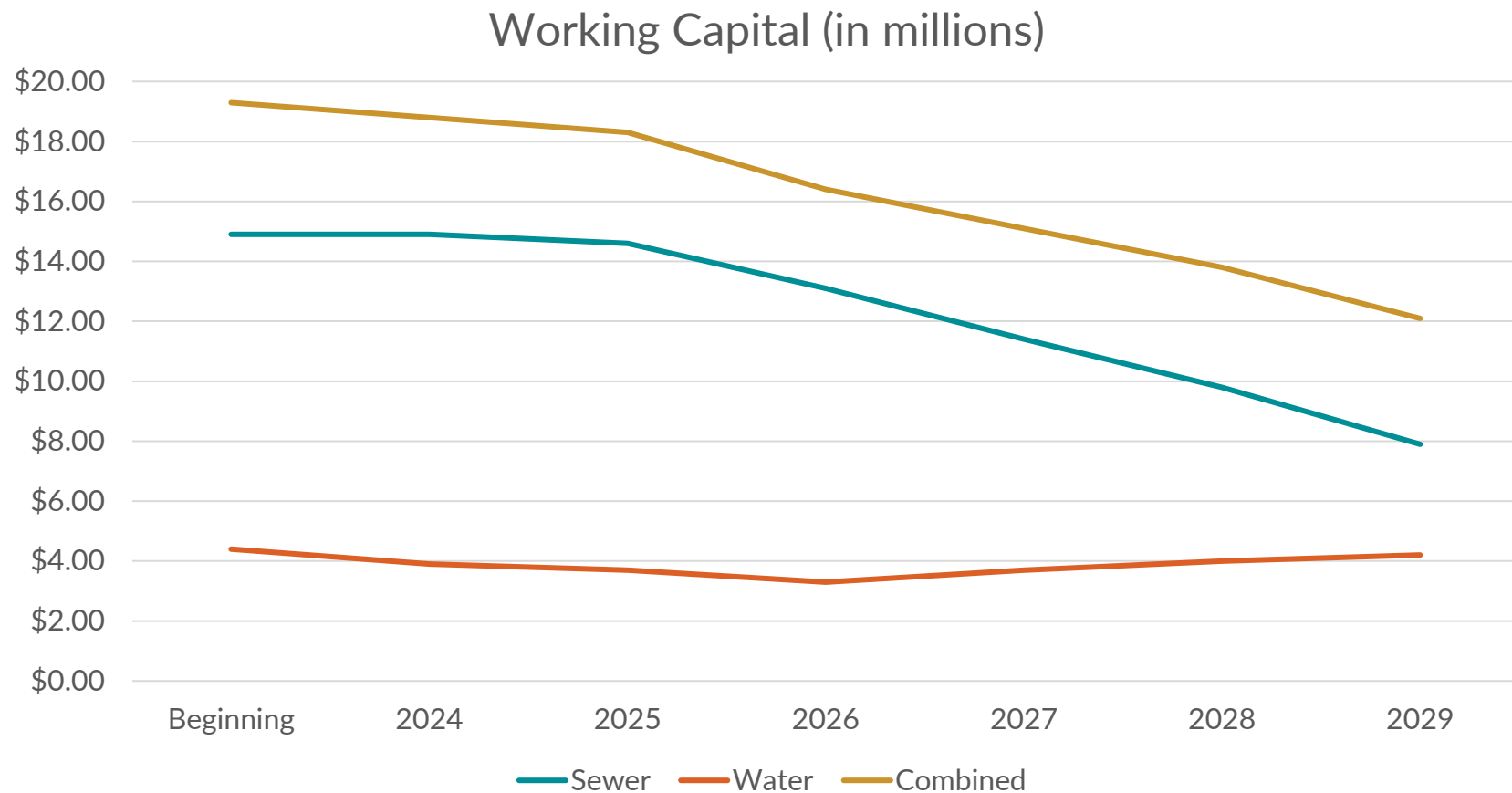




# Working Capital Changes

Water working capital (orange) decreases as capital projects are performed, but begins to increase thereafter.

Sewer working capital (green) intentionally decreases by \$7M over 5 years as a result of the significant capital projects, but is still very healthy at \$7.9M in 2029.





# Effect on Customers

Because the models do not include a rate change to the RTS or water debt charges, the actual affect on the customer is less significant than the percentage increase to the variable rate would suggest. This is an example of an average residential customer in Scio.

Township "average" resident (3/4" line)								
			Actual	Forecast	Forecast	Forecast	Forecast	Forecast
			2024	2025	2026	2027	2028	2029
<b>Average User Water/Sewer bill</b>								
<b>Average customer uses</b>	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			\$ 564.99	\$ 699.93	\$ 734.92	\$ 771.67	\$ 810.25	\$ 850.77
Sewer Variable Charge			\$ 571.02	\$ 704.84	\$ 740.08	\$ 777.09	\$ 815.94	\$ 856.74
<b>Total Annual Water/Sewer bill</b>			\$ 1,462.24	\$ 1,731.01	\$ 1,801.25	\$ 1,875.00	\$ 1,952.43	\$ 2,033.74
<b>Total Quarterly Water/Sewer bill</b>			\$ 365.56	\$ 432.75	\$ 450.31	\$ 468.75	\$ 488.11	\$ 508.44
<b>\$ increase to annual cost</b>				\$ 268.76	\$ 70.24	\$ 73.75	\$ 77.44	\$ 81.31
<b>\$ increase to quarterly bill</b>				\$ 67.19	\$ 17.56	\$ 18.44	\$ 19.36	\$ 20.33
<b>Overall effective increase in Water/Sewer average annual user cost</b>			n/a	18.4%	4.1%	4.1%	4.1%	4.2%



# Effect on Customers

This is an example of a high-volume residential customer in Scio.

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			\$ 1,129.98	\$ 1,399.85	\$ 1,469.85	\$ 1,543.34	\$ 1,620.50	\$ 1,701.53
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			\$ 2,598.25	\$ 3,135.78	\$ 3,276.25	\$ 3,423.75	\$ 3,578.63	\$ 3,741.25
Total Quarterly Water/Sewer bill			\$ 649.56	\$ 783.94	\$ 819.06	\$ 855.94	\$ 894.66	\$ 935.31
\$ increase to annual cost				\$ 537.53	\$ 140.48	\$ 147.50	\$ 154.88	\$ 162.62
\$ increase to quarterly bill				\$ 134.38	\$ 35.12	\$ 36.88	\$ 38.72	\$ 40.65
Overall effective increase in Water/Sewer average annual user cost			n/a	20.7%	4.5%	4.5%	4.5%	4.7%



# Next Steps

Consider approving rates as presented



Continue updating the capital plan



Continue updating the model on an annual basis as part of the budget process.



# Thank you for the opportunity to serve the Scio Township.

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