Water and Wastewater Rate Study

Township of Whitewater Region

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List of Acronyms and Abbreviations

Acronym	Full Description of Acronym
A.M.I.	Advanced Metering Infrastructure
A.M.O.	Association of Municipalities of Ontario
A.M.R.	Automatic Meter Reading
C.W.W.F.	Clean Water and Wastewater Fund
D.C.A.	Development Charges Act, 1997
F.I.R.	Financial Information Return
I.J.P.A.	Infrastructure for Jobs and Prosperity Act, 2015
I.O.	Infrastructure Ontario
LPAT	Local Planning Appeal Tribunal
M.O.E.	Ministry of Environment
O.C.I.F.	Ontario Community Infrastructure Fund
OCWA	Ontario Clean Water Agency
OLT	Ontario Land Tribunal
O.M.B.	Ontario Municipal Board
O. Reg.	Ontario Regulation
O.S.I.F.A.	Ontario Strategic Infrastructure Financing Authority
P.S.A.B.	Public Sector Accounting Board
P.T.I.F.	Public Transit Infrastructure Fund
R.F.	Radio Frequency
S.W.S.S.A.	Sustainable Water and Sewage Systems Act, 2002

Executive Summary

Executive Summary

The Township of Whitewater Region (Township) retained Watson & Associates Economists Ltd. (Watson) to undertake a water and wastewater rate study. This study aims to prepare an analysis of the Township's water and wastewater rate forecast based on current capital and operating forecasts, costing for lifecycle replacement requirements, current volumes and customer profiles. The results of this analysis provide updated water and wastewater flat rates and volume rates for customers within the Township. In addition, this report reviewed the definitions of the current rate categories and analyzed potential cost impacts of installing meters to measure water usage. The rate analysis contained herein continues to provide fiscally responsible practices that align with current provincial legislation. This analysis includes rate increases that allow the Township to work towards saving the full lifecycle replacement amounts required for adequate asset management practices.

The analysis presented herein provides the following:

- The present rate structure for water is a consolidated flat rate for all areas. There is also a volume charge for metered properties (only 3 properties currently). The flat rates are weighted based on the property type;
- The present rate structure for wastewater is a flat rate as well as a volume charge for metered properties (only 3 properties currently). The flat rates are weighted based on the property type;
- The 2025 to 2034 capital spending program for water and wastewater is $7.29 million and $2.67 million (inflated), respectively;
- A significant portion (approximately 64%) of the water capital spending program is related to three (3) projects:
    - Recoating of the Water Tower Storage Tank in 2027;
    - Cobden Water Treatment Plant Upgrade project in 2027; and
    - the Crawford Street Watermain project in 2026;
- For wastewater, a significant portion (approximately 34%) of the capital spending program is related to the membrane filter replacements at the Cobden Wastewater Treatment Plan in 2027;
- Annual operating expenditures related to operating contracts, wages and salaries are assumed to increase by 2% per annum over the forecast, while expenditures

related to utilities, fuels, chemicals and other materials are increasing at 5% per annum;

- Existing water units total 1,104 (this total includes 3 metered users); an average of 5 new units annually is anticipated over the next 10-year period;
- Existing wastewater units total 534 (this total includes 3 metered users); an average of 3 new units annually is anticipated over the next 10-year period;
- Recommended changes to categorization of the following property types are included in section 1.9 of this report:
    - Hair salons;
    - Car washes;
    - Laundromats;
    - Cement plants;
    - Breweries; and
    - Funeral homes.
- Additional customer categories such as geothermal structures, covered arenas, schools, and attached halls were also reviewed based on discussion with staff. Recommendations for categorizing these categories are included in section 1.9 of this report.
- All new units are assumed to be flat rate units (i.e. non-metered); and
- The present rate structure for water and wastewater (flat rate for non-metered customers and a constant volume rate for metered customers) is continued.

Note that although the analysis is based on the assumption that all new units will be flat rate units, Chapter 7 provides an analysis on the potential cost impact of installing meters. Should the Township install meters in the near future, the rate analysis can be updated to reflect actual usage by customers in the Township.

Based on the above information, rate increases have been balanced for the combined water/wastewater user to experience a 4% annual increase on the combined bill from 2026 to 2030, and a 3% increase every year thereafter. This is achieved by providing the following changes to water and wastewater:

- To meet the needs of the water forecast, an annual increase of 5% to the flat rates and volume rates is required for the forecast period from 2026 to 2034.

- To meet the needs of the wastewater forecast, it is recommended that the wastewater volume and base rates increase by 4% from 2026 to 2029, 3% in 2030, and 2% every year thereafter.
- As noted, the combined impact of the water and wastewater rates above is equal to a 4% annual increase on the combined bill from 2026 to 2030, and an increase of 3% every year thereafter.

Table ES-1 summarizes the recommended water and wastewater rates and average annual bill (for residential customers) based on the analysis provided herein over the forecast period.

Table ES-1
Township of Whitewater Region
Average Annual Residential Water and Wastewater Bill

Description	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Water										
Bi-Monthly Flat Rate	$201.42	$211.49	$222.07	$233.17	$244.83	$257.07	$269.92	$283.42	$297.59	$312.47
Annual Water Bill	**$1,208.52**	**$1,268.95**	**$1,332.39**	**$1,399.01**	**$1,468.96**	**$1,542.41**	**$1,619.53**	**$1,700.51**	**$1,785.53**	**$1,874.81**
% Increase (Water Bill)		**5%**	**5%**	**5%**	**5%**	**5%**	**5%**	**5%**	**5%**	**5%**
Wastewater										
Bi-Monthly Flat Rate	$326.46	$339.52	$353.10	$367.22	$381.91	$393.37	$401.24	$409.26	$417.45	$425.80
Annual Wastewater Bill	**$1,958.76**	**$2,037.11**	**$2,118.59**	**$2,203.34**	**$2,291.47**	**$2,360.22**	**$2,407.42**	**$2,455.57**	**$2,504.68**	**$2,554.77**
% Increase (Wastewater Bill)		**4%**	**4%**	**4%**	**4%**	**3%**	**2%**	**2%**	**2%**	**2%**
Total Water and Wastewater Bill	**$3,167.28**	**$3,306.06**	**$3,450.99**	**$3,602.35**	**$3,760.44**	**$3,902.63**	**$4,026.95**	**$4,156.08**	**$4,290.21**	**$4,429.59**
Annual % Increase		**4%**	**4%**	**4%**	**4%**	**4%**	**3%**	**3%**	**3%**	**3%**

Report

Chapter 1
Introduction

1. Introduction

1.1 Background

The Township of Whitewater Region (Township) is located in Renfrew County, with a population of 7,225 people. The Township currently services three systems, the Haley water system, the Beachburg water system and the Cobden water and wastewater system. Currently, there are 1,101 flat rate (i.e. non-metered) water customer units, 531 flat rate wastewater customer units, and 3 metered water and wastewater customer units. These customer units are comprised of residential and non-residential. The Cobden system's water source comes from Muskrat Lake and is treated by the Cobden water treatment plant owned by the Township and currently operated by Ontario Clean Water Agency (OCWA). The source water for the Haley system is two drilled wells, whereas the Beachburg system consists of one dug well and one drilled well, all of which are owned by the Township.

All three areas currently utilize the same bi-monthly flat rate charge for their non-metered customers. The metered customers in the Cobden area pay a volume charge on a per cubic meter basis (or a minimum small residential/commercial rate, whichever is higher) for water and wastewater. The bi-monthly flat rates for water and wastewater are differentiated by class of user. Table 1-1 provides the 2024 rates and Table 1-2 provides the existing rates currently in effect for 2025.

Table 1-1
Township of Whitewater Region
Water and Wastewater Rates – 2024

2024 - Water Billing Rates	
Bi-Monthly Flat Rate Charge	
Residential	195.56
Multi-Residential (1st Unit)	195.56
Multi-Residential (2nd & subsequent units)	156.45
Small Commercial	195.56
Medium Commercial	293.54
High/Large Commercial	391.31
Vacant Residential/Small Commercial/Multi-res	39.11
Vacant Medium Commercial	58.71
Vacant High Commercial	78.26
Volume Charge	
$ 2.041	per m^3

2024 - Wastewater Billing Rates	
Bi-Monthly Flat Rate Charge	
Residential	316.96
Multi-Residential (1st Unit)	316.96
Multi-Residential (2nd & subsequent units)	253.57
Small Commercial	316.96
Medium Commercial	475.32
High/Large Commercial	633.90
Vacant Residential/Small Commercial/Multi-res	63.39
Vacant Medium Commercial	95.06
Vacant High Commercial	126.78
Volume Charge	
$ 4.914	per m^3

Table 1-2
Township of Whitewater Region
Water and Wastewater Rates – 2025

2025 - Water Billing Rates	
Bi-Monthly Flat Rate Charge	
Residential	201.42
Multi-Residential (1st Unit)	201.42
Multi-Residential (2nd & subsequent units)	161.14
Small Commercial	201.42
Medium Commercial	302.34
High/Large Commercial	403.05
Vacant Residential/Small Commercial/Multi-res	39.11
Vacant Medium Commercial	60.47
Vacant High Commercial	80.61
Volume Charge	
$ 2.102	per m^3

2025 - Wastewater Billing Rates	
Bi-Monthly Flat Rate Charge	
Residential	326.46
Multi-Residential (1st Unit)	326.46
Multi-Residential (2nd & subsequent units)	261.26
Small Commercial	326.46
Medium Commercial	489.58
High/Large Commercial	652.92
Vacant Residential/Small Commercial/Multi-res	63.39
Vacant Medium Commercial	97.92
Vacant High Commercial	130.58
Volume Charge	
$ 5.061	per m^3

Since the Walkerton crisis, the Province has continued to make legislative changes for municipal water and wastewater systems. Noted below are the historical changes along with pending legislation anticipated to be implemented in the future. Watson & Associates Economists Ltd. (Watson) was retained by the Township of Whitewater Region to assist in addressing these changes in a proactive manner as they relate to the water and wastewater systems. The assessment provided herein addresses changes recommended to the water and wastewater rates based on the most current information and forecasts the implications over the next 10-year period.

1.2 Study Process

The objectives of the study and the steps involved in carrying out this assignment are summarized below:

- Identify all current and future water and wastewater system capital needs to assess the immediate and longer-term implications;
- Identify potential methods of cost recovery from the capital needs listing. These recovery methods may include other statutory authorities (e.g. *Development Charges Act, 1997* (D.C.A.), *Municipal Act*, etc.) as an offset to recovery through the water and wastewater rates;
- Identify existing operating costs by component and estimate future operating costs over the next 10-years. This assessment identifies fixed and variable costs in order to project those costs sensitive to changes to the existing infrastructure inventory, as well as costs which may increase commensurate with growth;
- Review the existing customer class categories and provide recommendations for updates;
- Undertake an analysis of potential costs to install and operate water meters; and
- Provide staff and Committee/Council the findings to assist in gaining approval of the rates for 2026 and future years.

1.3 Regulatory Changes in Ontario

Resulting from the water crisis in Walkerton, significant regulatory changes have been made in Ontario. These changes arise as a result of the Walkerton Commission and the 93 recommendations made by the Walkerton Inquiry Part II report. Areas of recommendation include:

- watershed management and source protection;
- quality management;
- preventative maintenance;
- research and development;
- new performance standards;
- sustainable asset management; and
- lifecycle costing.

The legislation which would have most impacted municipal water and wastewater rates was the *Sustainable Water and Sewage Systems Act* (S.W.S.S.A.) which would have required municipalities to implement full cost pricing. The legislation was enacted in 2002, however, it had not been implemented pending the approval of its regulations. The Act was repealed as of January 1, 2013. It is expected that the provisions of the *Water Opportunities Act* will implement the fundamental requirements of S.W.S.S.A. Furthermore, on December 27, 2017, O. Reg. 588/17 was released under the *Infrastructure for Jobs and Prosperity Act, 2015* (I.J.P.A.), which outlines the requirements for asset management for municipalities. The results of the asset management review under this Act will need to be considered in light of the recent investments undertaken by the Township and the capital spending plan provided herein. The following sections describe these various resulting changes.

1.4 Sustainable Water and Sewage Systems Act

As noted earlier, the S.W.S.S.A. was passed on December 13, 2002. The intent of the Act was to introduce the requirement for municipalities to undertake an assessment of the "full cost" of providing their water and wastewater services. It is noted, however, that this Act has been repealed. To provide broader context and understanding to other legislation discussed herein, a description of the Act is provided below.

Full costs for water service was defined in subsection 3(7) of the Act and included "…source protection costs, operating costs, financing costs, renewal and replacement costs and improvement costs associated with extracting, treating or distributing water to the public and such other costs which may be specified by regulation." Similar provisions were made for wastewater services in subsection 4(7) with respect to "…collecting, treating or discharging waste water."

The Act would have required the preparation of two reports for submission to the Ministry of the Environment (or such other member of the Executive Council as may be assigned the administration of this Act under the *Executive Council Act*). The first report was on the "full cost of services" and the second was the "cost recovery plan." Once these reports were reviewed and approved by the Ministry, the municipality would have been required to implement the plans within a specified time period.

In regard to the **full cost of services** report, the municipality (deemed a regulated entity under the Act) would prepare and approve a report concerning the provision of water

and sewage services. This report was to include an inventory of the infrastructure, a management plan providing for the long-term integrity of the systems, and would address the full cost of providing the services (other matters may be specified by the regulations) along with the revenue obtained to provide them. A professional engineer would certify the inventory and management plan portion of the report. The municipality's auditor would be required to provide a written opinion on the report. The report was to be approved by the municipality and then be forwarded to the Ministry along with the engineer's certification and the auditor's opinion. The regulations would stipulate the timing for this report.

The second report was referred to as a **cost recovery plan** and would address how the municipality intended to pay for the full costs of providing the service. The regulations were to specify limitations on what sources of revenue the municipality may use. The regulations may have also provided limits as to the level of increases any customer or class of customer may experience over any period of time. Provision was made for the municipality to implement increases above these limits; however, ministerial approval would be required first. Similar to the first report, the municipal auditor would provide a written opinion on the report prior to Council's adoption, and this opinion must accompany the report when submitted to the Province.

The Act provided the Minister the power to approve or not approve the plans. If the Minister was not satisfied with the report or if a municipality did not submit a plan, the Minister may have a plan prepared. The cost to the Crown for preparing the plan would be recovered from the municipality. As well, the Minister may direct two or more regulated municipalities to prepare a joint plan. This joint plan may be directed at the onset or be directed by the Minister after receiving the individual plans from the municipalities.

The Minister also had the power to order a municipality to generate revenue from a specific revenue source or in a specified manner. The Minister may have also ordered a regulated entity to do or refrain from doing such things as the Minister considered advisable to ensure that the entity pays the full cost of providing the services to the public.

Once the plans were approved and in place, the municipality would be required to submit progress reports. The timing of these reports and the information to be contained therein would be established by the regulations. A municipal auditor's

opinion must be provided with the progress report. Municipalities would also revise the plans if they deem the estimate does not reflect the full cost of providing the services, as a result of a change in circumstances, regulatory or other changes that affect their plan, etc. The municipality would then revise its prior plan, provide an auditor's opinion, and submit the plan to the Minister.

1.5 Financial Plans Regulation

On August 16, 2007, the M.O.E. passed O. Reg 453/07 which requires the preparation of financial plans for water (and wastewater) systems. The M.O.E. has also provided a Financial Plan Guidance Document to assist in preparing the plans. A brief summary of the key elements of the regulation is provided below:

- The financial plan will represent one of the key elements for the municipality to obtain its Drinking Water Licence;
- The financial plans shall be for a period of at least six years, but longer planning horizons are encouraged;
- As the regulation is under the *Safe Drinking Water Act, 2002*, the preparation of the plan is mandatory for water and encouraged for wastewater;
- The plan is considered a living document (i.e. will be updated as annual budgets are prepared) but will need to be undertaken, at a minimum, every five years;
- The plans generally require the forecasting of capital, operating and reserve fund positions, providing detailed inventories, forecasting future users and volume usage and corresponding calculation of rates. In addition, P.S.A.B. information on the system must be provided for each year of the forecast (i.e. total non-financial assets, tangible capital asset acquisitions, tangible capital asset construction, betterments, write-downs, disposals, total liabilities and net debt);
- The financial plans must be made available to the public (at no charge) upon request and be available on the municipality's website. The availability of this information must also be advertised; and
- The financial plans are to be approved by Resolution of the Council or governing body indicating that the drinking water system is financially viable.

In general, the financial principles of the draft regulations follow the intent of S.W.S.S.A. to move municipalities towards financial sustainability. Many of the prescriptive

requirements, however, have been removed (e.g. preparation of two separate documents for provincial approval, auditor opinions, engineer certifications, etc.).

A Guideline ("Towards Financially Sustainable Drinking Shores – Water and Wastewater Systems") had been developed to assist municipalities in understanding the Province's direction and provided a detailed discussion on possible approaches to sustainability. The Province's Principles of Financially Sustainable Water and Wastewater Services are provided below:

Principle #1: Ongoing public engagement and transparency can build support for, and confidence in, financial plans and the system(s) to which they relate.

Principle #2: An integrated approach to planning among water, wastewater, and stormwater systems is desirable given the inherent relationship among these services.

Principle #3: Revenues collected for the provision of water and wastewater services should ultimately be used to meet the needs of those services.

Principle #4: Lifecycle planning with mid-course corrections is preferable to planning over the short term, or not planning at all.

Principle #5: An asset management plan is a key input to the development of a financial plan.

Principle #6: A sustainable level of revenue allows for reliable service that meets or exceeds environmental protection standards, while providing sufficient resources for future rehabilitation and replacement needs.

Principle #7: Ensuring users pay for the services they are provided leads to equitable outcomes and can improve conservation. In general, metering and the use of rates can help ensure users pay for services received.

Principle #8: Financial plans are "living" documents that require continuous improvement. Comparing the accuracy of financial projections with actual results can lead to improved planning in the future.

Principle #9: Financial plans benefit from the close collaboration of various groups, including engineers, accountants, auditors, utility staff, and municipal Council.

1.6 Water Opportunities Act, 2010

As noted earlier, since the passage of the *Safe Drinking Water Act, 2002*, continuing changes and refinements to the legislation have been introduced. Some of these Bills have found their way into law, while others have not been approved. Bill 72, the *Water Opportunities Act, 2010*, was introduced into legislation on May 18, 2010 and received Royal Assent on November 29, 2010.

The Act provides for the following elements:

- The fostering of innovative water, wastewater and stormwater technologies, services and practices in the private and public sectors;
- Preparation of water conservation plans to achieve water conservation targets established by the regulations; and
- Preparation of sustainability plans for municipal water services, municipal wastewater services and municipal stormwater services.

With regard to the sustainability plans:

- The Act extends from the water financial plans and requires a more detailed review of the water financial plan and requires a full plan for wastewater and stormwater services; and
- Regulations will provide performance targets for each service – these targets may vary based on the jurisdiction of the regulated entity or the class of entity.

The financial plan shall include:

- An asset management plan for the physical infrastructure;
- A financial plan;
- For water, a water conservation plan;
- An assessment of risks that may interfere with the future delivery of the municipal service, including, if required by the regulations, the risks posed by climate change and a plan to deal with those risks; and

- Strategies for maintaining and improving the municipal service, including strategies to ensure the municipal service can satisfy future demand, consider technologies, services and practices that promote the efficient use of water and reduce negative impacts on Ontario's water resources, and increase co-operation with other municipal service providers.

Performance indicators will be established by service, with the following considerations:

- May relate to the financing, operation or maintenance of a municipal service or to any other matter in respect of what information may be required to be included in a plan;
- May be different for different municipal service providers or for municipal services in different areas of the Province.

Regulations will prescribe:

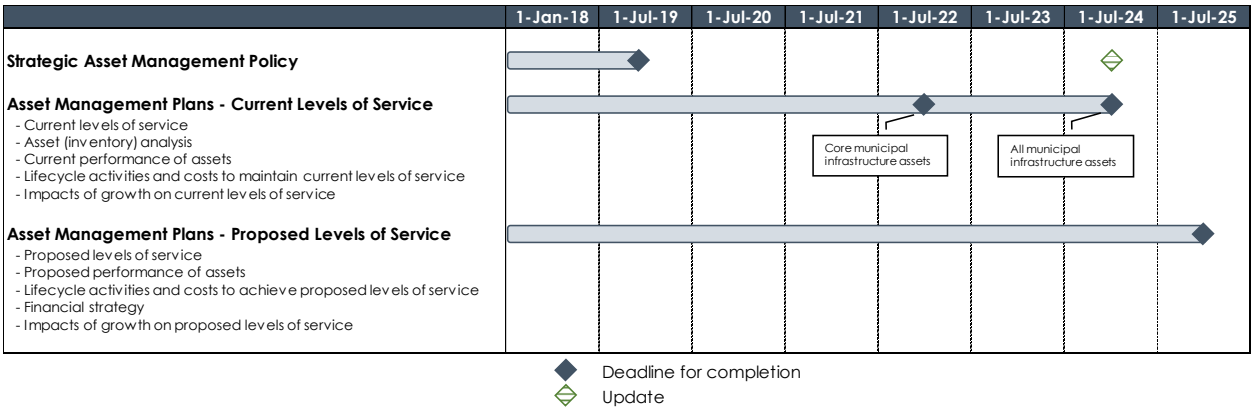
- Timing;
- Contents of the plans;
- Which identified portions of the plan will require certification;
- Public consultation process; and
- Limitations, updates, refinements, etc.

As noted earlier, it is expected that this Act will implement the principles of the S.W.S.S.A. once all regulations are put in place.

1.7 Infrastructure for Jobs and Prosperity Act, 2015 (I.J.P.A.)

On June 4, 2015, the Province of Ontario passed the I.J.P.A. which, over time, will require municipalities to undertake and implement asset management plans for all infrastructure they own. On December 27, 2017, the Province released Ontario Regulation 588/17 under the I.J.P.A. which has three phases that municipalities must meet:

Figure 1-1
Legislative Timelines set out by the Jobs and Prosperity Act
Legislation related to Asset Management Plans



Note: on March 15, 2021, the Province filed Regulation 193/21 to extend all of the timelines of Regulation 588/17 by one year (reflected in the table above).

Every municipality in Ontario will have to prepare a strategic asset management policy by July 1, 2019. Municipalities will be required to review their strategic asset management policies at least every five years and make updates as necessary. The subsequent phases are as follows:

- Phase 1 – Asset Management Plan (by July 1, 2022):
    - For core assets, municipalities must have the following:
        - Inventory of assets;
        - Current levels of service measured by standard metrics; and
        - Costs to maintain levels of service.
- Phase 2 – Asset Management Plan (by July 1, 2024):
    - Same steps as Phase 1 but for all assets.
- Phase 3 – Asset Management Plan (by July 1, 2025):
    - Builds on Phase 1 and 2 by adding:
        - Proposed levels of service; and
        - Lifecycle management and financial strategy.

In relation to water and wastewater (which is considered a core asset), municipalities will need to have an asset management plan that addresses the related infrastructure by July 1, 2022 (Phase 1). O. Reg. 588/17 specifies that the municipality's asset management plan must include the following for each asset category:

- The current levels of service being provided, determined in accordance with the following qualitative descriptions and technical metrics and based on data from at most the two calendar years prior to the year in which all information required under this section is included in the asset management plan;
- The current performance of each asset category, including:
    - a summary of the assets in the category;
    - the replacement cost of the assets in the category;
    - the average age of the assets in the category, determined by assessing the average age of the components of the assets;
    - the information available on the condition of the assets in the category;
    - a description of the municipality's approach to assessing the condition of the assets in the category, based on recognized and generally accepted good engineering practices where appropriate; and
- The lifecycle activities that would need to be undertaken to maintain the current levels of service.

1.8 Forecast Growth and Servicing Requirements

The Township of Whitewater Region services 1,101 flat rate water units, 531 flat rate wastewater units, and 3 metered water and wastewater customers. Information on the existing number of customer units and existing billable volumes was obtained from the Township.

As noted above, the flat rates are structured based on class of user. The rates are based on the relationship between the class of user, relative to a residential customer unit. To maintain a consistent relationship between the various rate categories, the customer units are "weighted" relative to a residential customer unit based on their existing water rates. For example, a medium commercial customer unit is considered to be 1.5 residential customer unit, therefore they would pay 1.5 times the residential rate. The definitions for classes of users are provided in Appendix C. Recommendations for changes to the definitions of classes of users are provided in section 1.9 of this report. Table 1-3 provides a summary of the existing customer profile, by class of user, and the weighting used to relate the class of users with a residential customer unit.

Table 1-3
Township of Whitewater Region
Customer Profile – Weighted Customer Units

Description	Number of Customer Units	Water Weighting	Weighted Customer Unit Count	Numer of Customer Units	Wastewater Weighting	Wastewater Weighted Customer Unit Count
Residential/Multi-Residential (1st Unit)	893	1.00	893	391	1.00	391
Multi-Residential (2nd & subsequent units)	113	0.80	90	79	0.80	63
Small Commercial	50	1.00	50	37	1.00	37
Medium Commercial	22	1.50	33	14	1.50	21
High/Large Commercial	23	2.00	46	10	2.00	20
Total Flat Rate Users	**1,101**		**1,112**	**531**		**532**
Metered Customers	3			3		
Total Customer Units	**1,104**			**534**		

For future water and wastewater customers to be added to the systems, consideration has been given to development potential within the Township over the forecast period of 2025 to 2034. The future development estimates are based on the growth forecast utilized in the Township's 2019 Development Charges Background Study as well as discussion with staff.

Table 1-4 provides for the forecast of water users and volumes for Whitewater Region, while Table 1-5 provides the forecast of wastewater users and volumes.

Table 1-4
Township of Whitewater Region
2025 to 2034 Water System Forecast

Water Users Forecast

Year	Total Users	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2025	5	3	5	5	5	5	5	5	5	5	5
2026	5		3	5	5	5	5	5	5	5	5
2027	5			3	5	5	5	5	5	5	5
2028	5				3	5	5	5	5	5	5
2029	5					3	5	5	5	5	5
2030	5						3	5	5	5	5
2031	5							3	5	5	5
2032	5								3	5	5
2033	5									3	5
2034	6										3
Total	**51**	**3**	**8**	**13**	**18**	**23**	**28**	**33**	**38**	**43**	**48**

Water Customer Forecast	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing - Metered	3	3	3	3	3	3	3	3	3	3
Existing - Non-Metered (Weighted)	1,112	1,112	1,112	1,112	1,112	1,112	1,112	1,112	1,112	1,112
New - Growth - Metered										
New - Growth - Non-Metered	3	8	13	18	23	28	33	38	43	48
Total	**1,118**	**1,123**	**1,128**	**1,133**	**1,138**	**1,143**	**1,148**	**1,153**	**1,158**	**1,163**

Table 1-5
Township of Whitewater Region
2025 to 2034 Wastewater System Forecast

Wastewater Users Forecast

Year	Total Users	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2025	3	2	3	3	3	3	3	3	3	3	3
2026	3		2	3	3	3	3	3	3	3	3
2027	3			2	3	3	3	3	3	3	3
2028	3				2	3	3	3	3	3	3
2029	3					2	3	3	3	3	3
2030	3						2	3	3	3	3
2031	3							2	3	3	3
2032	3								2	3	3
2033	3									2	3
2034	4										2
Total	**31**	**2**	**5**	**8**	**11**	**14**	**17**	**20**	**23**	**26**	**29**

Wastewater Customer Forecast	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Existing - Metered	3	3	3	3	3	3	3	3	3	3
Existing - Non-Metered (Weighted)	532	532	532	532	532	532	532	532	532	532
New - Growth - Metered										
New - Growth - Non-Metered	2	5	8	11	14	17	20	23	26	29
Total	**537**	**540**	**543**	**546**	**549**	**552**	**555**	**558**	**561**	**564**

1.9 Review of Select Non-Residential Property Types

As a part of this rate study, the Township has also requested a review of the customer categorization in the existing rate structure. Specifically, the Township has requested a select category of non-residential property types as a part of this process. These properties are hair salons, car washes, laundromats, funeral homes, cement plants, and breweries.

The current rate structure in the Township categorizes non-residential properties based on its purpose and size. A detailed description of the categories can be found in Appendix C. For example, a retail space less than 1,000 sq.ft of floor area, laundromats, and car washes all fall under the small commercial category, which currently has the same flat rate charge as a residential customer. It is reasonable to assume that laundromats and car washes would have higher water usage than a retail shop or a residential customer given the nature of their businesses. Although the properties in the Township are not currently metered, the Township is exploring options to incorporate meters which would allow customers to pay based on their usage. An in-depth discussion of meter implementation options will be discussed in Chapter 7 of this report. In the interim, the select property types mentioned above have been reviewed to determine if the existing rates are equitable.

To determine an appropriate rate for the non-residential properties, we must estimate the volume usage of the non-residential properties relative to a residential customer property. Since the Township does not have volume data, similar properties in other Ontario communities that utilize a metered rate structure have been reviewed to inform this analysis. The municipalities that were reviewed as part of this process are the Municipality of Mississippi Mills (Lanark County), Town of Kingsville (Essex County), Township of Cavan Monaghan (Peterborough County), and Township of Springwater (Simcoe County).

For each property that falls under the select category of non-residential property types (i.e., hair salon, car wash, etc.), a ratio of their annual usage to the usage of an average residential customer in that particular municipality was calculated. For instance, hair salons in the Township of Kingsville recorded an annual water consumption of approximately 300 cubic meters, while the average residential customer used

approximately 180 cubic meters per year. Therefore, the water usage of hair salons is approximately 1.7 times that of a residential user in Kingsville.

Note: additional categories were reviewed and recommendations are provided based on discussion with Township staff. These relate to industry type businesses, halls with kitchen/servery, geothermal structures, covered arenas, schools, attached halls, and vacancy units.

1.9.1 Observations

Across the four municipalities that were reviewed, the average residential water consumption is approximately 167 cubic meters per year. Consumption data on cement plants were not available and may vary significantly. As a result, these property types were not included in the review of data from other municipalities.

The average consumption of hair salons across the four municipalities is approximately 316 cubic meters per year. Therefore, on average, the water usage of a hair salon is approximately 1.9 times the consumption of an average residential customer.

For a car wash, the average annual consumption observed across the four municipalities is approximately 1609 cubic meters per bay. Therefore, on average, the water usage of a car wash bay is approximately 9.7 times the consumption of an average residential customer.

The average consumption of laundromats across the four municipalities is approximately 3476 cubic meters per year. Therefore, on average, the water usage of a laundromat is approximately 20.8 times the consumption of an average residential customer.

For a funeral home, the average annual consumption observed across the four municipalities is approximately 167 cubic meters. Therefore, on average, the water usage of a funeral home is similar to that of an average residential customer.

The average consumption of breweries across the four municipalities is approximately 2942 cubic meters per year. Therefore, on average, the water usage of a brewery is approximately 17.6 times the consumption of an average residential customer.

1.9.2 Recommendations

Based on the observations in Section 1.9.1, the recommendations for updating the Township's customer categorization are as follows:

- To rename the existing "High/Large Commercial" category to "High/Large Commercial – Tier 1";
- To add a new customer category named "High/Large Commercial – Tier 2". A customer in this category will be considered to use the equivalent volume as 10 residential customers, and therefore will pay 10 times the residential rate;
- To recategorize all hair salons as Medium Commercial;
- To recategorize all car washes, laundromats, and breweries as High/Large Commercial – Tier 2; and
- To recategorize all funeral homes as Small Commercial.

Note that although the analysis above provides for higher usage from certain customer types, the addition of a High/Large Commercial – Tier 2 category may be utilized as an interim step until such time that properties are metered. Should the properties believe they use less water, they may install a water meter at their own cost and pay the volumetric rate.

In addition to the above, the following recommendations are provided based on discussion with Township staff:

- To recategorize Industrial Type Business from High/Large Commercial – Tier 1 to High/Large Commercial – Tier 2;
- To amend the High Commercial note to be High/Large Commercial Unit – Tier 1 under the Halls with Kitchen/Servery category;
- To amend the standard Commercial Unit note to be High/Large Commercial Unit – Tier 1 under the Geothermal category;
- To recategorize Covered Arenas and all associated operations as High/Large Commercial Unit – Tier 2;
- To amend the School – 6 units of High Commercial note to be School – 6 units of High/Large Commercial – Tier 1 under the Miscellaneous category;

- To amend the Small commercial – Attached Hall in excess of 1,500 sq.ft. note to be Attached Hall in excess of 1,500 sq.ft. – Small Commercial under the Miscellaneous category; and
- To add the following definition under the Vacancy category: “Vacancy applies also to properties eligible for the Municipal Act, 2001 Section (357) (d) (i), where the property was razed by fire, demolition or otherwise”.

Chapter 2
Capital Infrastructure Needs

2. Capital Infrastructure Needs

2.1 Capital Forecast

Capital forecasts have been provided for the water and wastewater systems and are presented in Tables 2-1 and 2-2 (note: the costs have been provided in uninflated dollars. The basis for these forecasts is the Township's Capital Budgets, projects identified in the Township's 2019 Development Charges Background Study, capital infrastructure replacement needs based on recommendations from the Ontario Clean Water Agency (O.C.W.A.), and replacement needs identified in the Township's 2022 Asset Management Plan. The capital plan addresses both lifecycle projects and studies to be undertaken for the forecast period.

A summary of the capital works related to the water and wastewater services is provided in the following tables. Table 2-1 presents the water capital forecast summary and Table 2-2 presents the Township's wastewater capital forecast summary.

Table 2-1
Township of Whitewater Region
2025 to 2034 Water Capital Forecast Summary (Uninflated $)

Description	Total 2025 to 2034	Years Undertaken
Capital Expenditures		
Beachburg Water Treatment Plant		
Decommission Well #1 & new drilled well	$200,000	2030
Chemical Treatment: Replace metering pumps	$16,000	2025, 2028
Chlorine Storage Tank and Chlorine Day Tank	$7,500	2027
Alum Storage Tank and Alum Day Tank	$12,000	2027
Replace Control Values (2)	$10,000	2030
Replace Manual Values (Butterfly, Gate, and Ball)	$10,000	2030
SCADA/PLC Program Replacement	$40,000	2031
Haley Water Treatment Plant		
Flow Meters (2) Replacement	$15,000	2030
Cobden Water Treatment Plant		
Filtration Compressor Replacement	$15,000	2027
Filtration Flash Mixers Replacement (4)	$14,000	2028
Chemical Process Pumps (4) and Diaphragm Pumps (6) Replacement	$30,000	2025, 2029, 2033
Level Monitoring	$10,500	2028
Water Tower Storage Tank: Recoating	$1,800,000	2027
Cobden WTP Upgrade Project	$2,000,000	2028
Miscellaneous		
Crawford Street (Water)	$600,000	2026
Hume Street (Water)	$300,000	2028
Stewart Street (Water)	$120,000	2028
Meadow Street (Water)	$410,000	2029
Beachburg Road (Water)	$400,000	2025
Water Meters - Comm	$125,000	2026
Water Meters - Res	$450,000	2032
Studies:		
Water Master Servicing Plan	$150,000	2026
Financial Plan and Rate Study	$35,000	2029, 2034
Total Capital Expenditures	**$6,770,000**	

Table 2-2
Township of Whitewater Region
2025 to 2034 Wastewater Capital Forecast Summary (Uninflated $)

Description	Total 2025 to 2034	Years Undertaken
Capital Expenditures		
Cobden Wastewater Treatment Plant		
Bar Screen Replacement/Upgrade (2)	$250,000	2027
Inlet Concrete Channel Repair	$10,000	2025
Flow Equalization Tank Inspection and Replacement	$42,000	2031-2032
Rotary Drum Screen Rehabilitation	$10,000	2027
Compacting Screw Conveyor Replacement (2)	$50,000	2031
Fine Bubble Aeration System Replacement	$80,000	2031
Membrane Filter Replacements	$850,000	2027
Chain falls, hoists, cranes, and other lifting devices	$30,000	2025
Permeate Rotary Lobe Pump Replacements	$35,000	2025
Chemical Pump Replacements	$15,000	2031
SCADA Overhaul	$20,000	2028
Old Building Upgrades	$150,000	2026
Pump VFDs Replacements (19)	$75,000	2032-2034
Simpson Street (Sanitary)	$215,000	2028
Meadow Street (Sanitary)	$220,000	2029
Water Meters - Comm	$59,783	2026
Water Meters - Res	$215,217	2032
Studies:		
Wastewater Master Servicing Plan	$100,000	2026
Water & Wastewater Rate Study	$35,000	2029, 2034
Total Capital Expenditures	**$2,462,000**	

Chapter 3
Lifecycle Costing

3. Lifecycle Costing

3.1 Overview of Lifecycle Costing

3.1.1 Definition

For many years, lifecycle costing has been used in the field of maintenance engineering and to evaluate the advantages of using alternative materials in construction or production design. The method has gained wider acceptance and use in the areas of industrial decision-making and the management of physical assets.

By definition, lifecycle costs are all the costs which are incurred during the lifecycle of a physical asset, from the time its acquisition is first considered to the time it is taken out of service for disposal or redeployment. The stages which the asset goes through in its lifecycle are specification, design, manufacture (or build), install, commission, operate, maintain and disposal. Figure 3-1 depicts these stages in a schematic form.

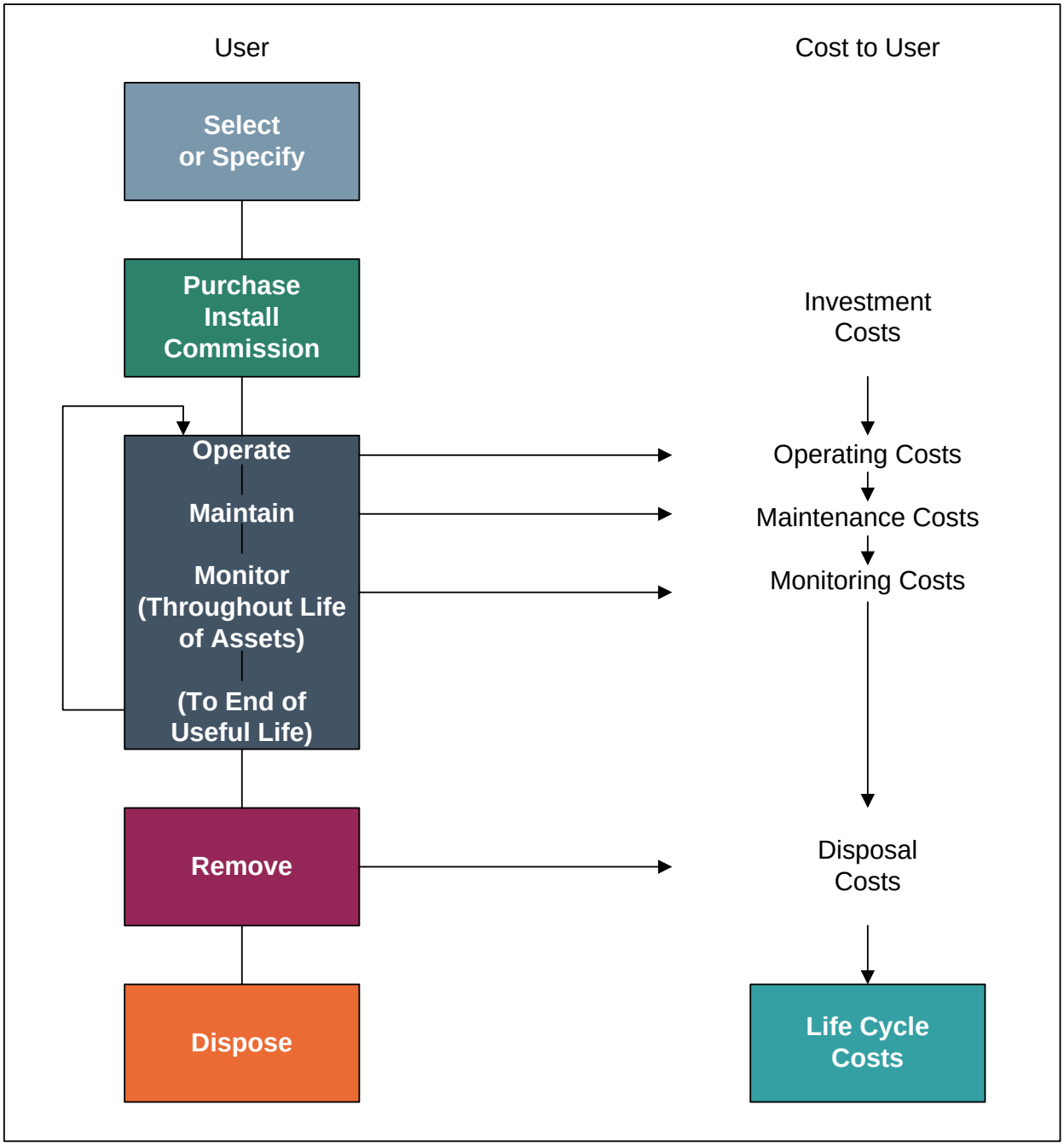
3.1.2 Financing Costs

This section will focus on financing mechanisms in place to fund the costs incurred throughout the asset's life.

In a municipal context, services are provided to benefit tax/rate payers. Acquisition of assets is normally timed in relation to direct needs within the community. At times, economies of scale or technical efficiencies will lead to oversizing an asset to accommodate future growth within the Municipality. Over the past few decades, new financing techniques such as development charges have been employed based on the underlying principle of having tax/rate payers who benefit directly from the service paying for that service. Operating costs which reflect the cost of the service for that year are charged directly to all existing tax/rate payers who have received the benefit. Operating costs are normally charged through the tax base or user rates.

Capital expenditures are recouped through several methods, with operating budget contributions, development charges, reserves, developer contributions and debentures, being the most common.

Figure 3-1
Lifecycle Costing



New construction related to growth could produce development charges and developer contributions (e.g. works internal to a subdivision which are the responsibility of the developer to construct) to fund a significant portion of projects, where new assets are

being acquired to allow growth within the Township to continue. As well, debentures could be used to fund such works, with the debt charge carrying costs recouped from taxpayers in the future.

Capital construction to replace existing infrastructure, however, is largely not growth-related and will therefore not yield development charges or developer contributions to assist in financing these works. Hence, a municipality will be dependent upon debentures, reserves and contributions from the operating budget to fund these works.

Figure 3-2 depicts the costs of an asset from its initial conception through to replacement and then continues to follow the associated costs through to the next replacement.

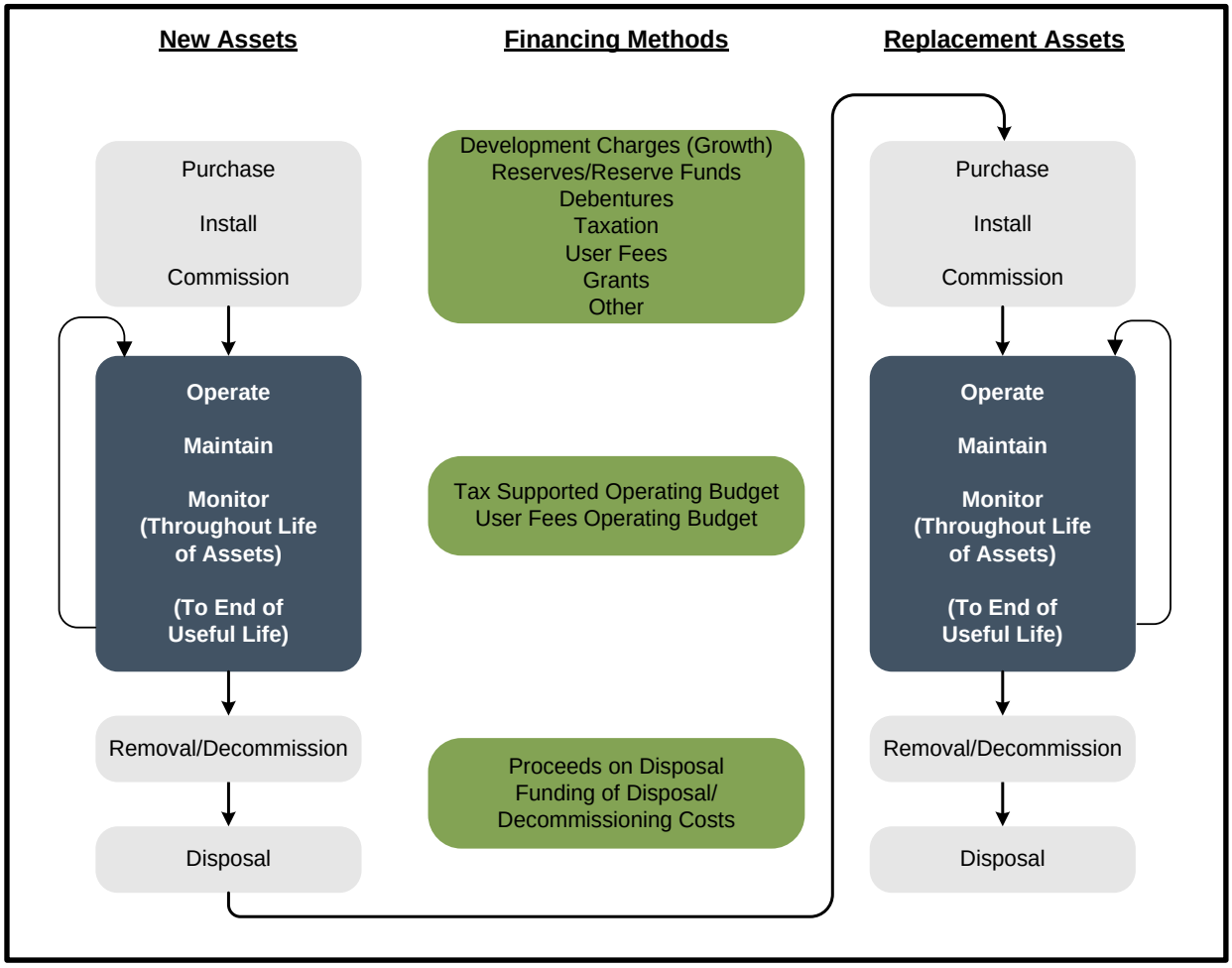
As referred to earlier, growth-related financing methods such as development charges and developer contributions could be utilized to finance the growth-related component of the new asset. These revenues are collected (indirectly) from the new homeowner who benefits directly from the installation of this asset. Other financing methods may be used as well to finance the non-growth-related component of this project, such as reserves which have been collected from past tax/rate payers, operating budget contributions which are collected from existing tax/rate payers and debenturing which will be carried by future tax/rate payers. Ongoing costs for monitoring, operating and maintaining the asset will be charged annually to the existing tax/rate payer.

When the asset requires replacement, the sources of financing will be limited to reserves, debentures and contributions from the operating budget. At this point, the question is raised: "If the cost of replacement is to be assessed against the tax/rate payer who benefits from the replacement of the asset, should the past tax/rate payer pay for this cost or should future rate payers assume this cost?" If the position is taken that the past user has used up the asset, hence he should pay for the cost of replacement, then a charge should be assessed annually through the life of the asset, to have funds available to replace it when the time comes. If the position is taken that the future tax/rate payer should assume this cost, then debenturing and, possibly, a contribution from the operating budget should be used to fund this work.

Charging for the cost of using up an asset is the fundamental concept behind depreciation methods utilized by the private sector. This concept allows for expending the asset as it is used up in the production process. The tracking of these costs forms

part of the product's selling price and, hence, end-users are charged for the asset's depreciation. The same concept can be applied in a municipal setting to charge existing users for the asset's use and set those funds aside in a reserve to finance the cost of replacing the asset in the future.

Figure 3-2
Financing Lifecycle Costs



3.1.3 Costing Methods

There are two fundamental methods of calculating the cost of the usage of an asset and for the provision of the revenue required when the time comes to retire and replace it. The first method is the Depreciation Method. This method recognizes the reduction in the value of the asset through wear and tear and aging. There are two commonly used

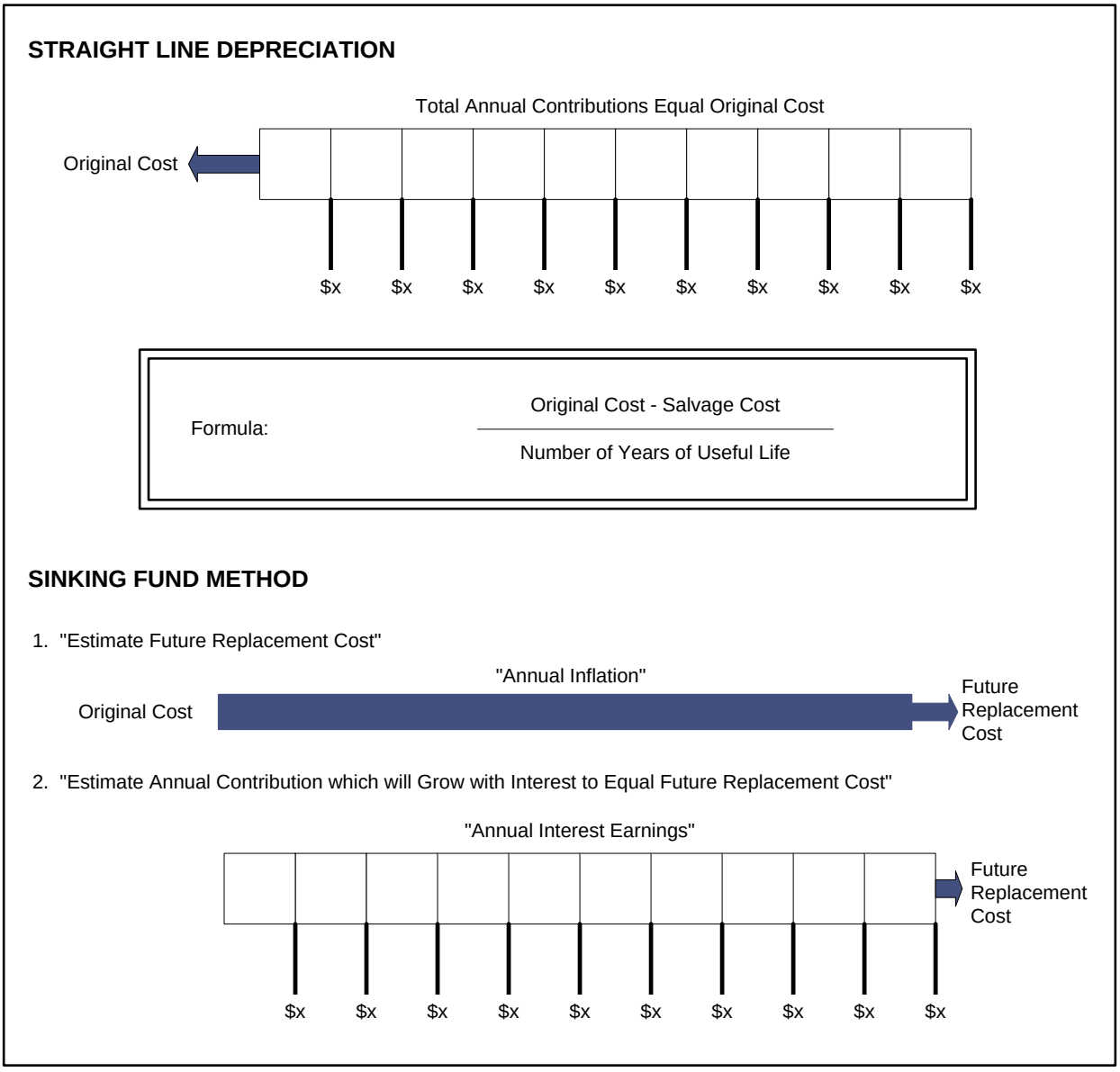
forms of depreciation: the straight-line method and the reducing balance method (shown graphically in Figure 3-3).

The straight-line method is calculated by taking the original cost of the asset, subtracting its estimated salvage value (estimated value of the asset at the time it is disposed of) and dividing this by the estimated number of years of useful life. The reducing balance method is calculated by utilizing a fixed percentage rate and this rate is applied annually to the undepreciated balance of the asset value.

The second method of lifecycle costing is the sinking fund method. This method first estimates the future value of the asset at the time of replacement. This is done by inflating the original cost of the asset at an assumed annual inflation rate. A calculation is then performed to determine annual contributions (equal or otherwise) which, when invested, will grow with interest to equal the future replacement cost.

The preferred method used herein for forecasting purposes is the sinking fund method of lifecycle costing.

Figure 3-3



3.2 Impact on Budgets

The age of the water distribution systems dates back to the early 1950s. The water systems have expanded throughout the years. The wastewater system dates back to the early 1950s. Based on information provided by Township staff, the total replacement cost of the Township's water infrastructure, including facilities, storage, and watermains, is estimated to be approximately $75.76 million. The average annual level

of investment recommended for linear water asset lifecycle rehabilitation and replacement needs is approximately $1.17 million.

Based on the information provided by Township staff, the total replacement cost of the Township's wastewater infrastructure, including sanitary mains, pumping stations, and facilities, is estimated to be approximately $33.20 million. The average annual level of investment recommended for linear wastewater asset lifecycle rehabilitation and replacement needs is $550,000 to maintain the average current condition.

Chapter 4
Capital Cost Financing Options

4. Capital Cost Financing Options

4.1 Summary of Capital Cost Financing Alternatives

Historically, the powers that municipalities had to raise alternative revenues to taxation to fund capital services have been restrictive. Over the past decade, legislative reforms have been introduced. Some of these have expanded municipal powers (e.g. Bill 26 introduced in 1996 to provide for expanded powers for imposing fees and charges), while others appear to restrict them (e.g. Bill 98 in 1997 and Bill 23 in 2022 providing amendments to the D.C.A.).

The Province passed a new *Municipal Act* which came into force on January 1, 2003. Part XII of the Act and O. Reg. 584/06 govern a municipality's ability to impose fees and charges. In contrast to the previous *Municipal Act*, this Act provides municipalities with broadly defined powers and does not differentiate between fees for operating and capital purposes. It is anticipated that the powers to recover capital costs under the previous *Municipal Act* will continue within the new Statutes and Regulations, as indicated by s.9(2) and s.452 of the new *Municipal Act*.

Under s.484 of *Municipal Act, 2001*, the *Local Improvement Act* was repealed with the in-force date of the *Municipal Act* (January 1, 2003). The municipal powers granted under the *Local Improvement Act* now fall under the jurisdiction of the *Municipal Act*. To this end, on December 20, 2002, O. Reg. 390/02 was filed, which allowed for the *Local Improvement Act* to be deemed to remain in force until April 1, 2003. O. Reg. 119/03 was enacted on April 19, 2003, which restored many of the previous *Local Improvement Act* provisions; however, the authority is now provided under the *Municipal Act*.

The methods of capital cost recovery available to municipalities are provided as follows:

Recovery Methods	Section Reference
• *Development Charges Act, 1997*	4.2
• *Municipal Act*	4.3
○ Fees and Charges	
○ Sewer and Water Area Charges	
○ Connection Fees	
○ Local Improvements	

Recovery Methods	Section Reference
• Historical Grant Funding Availability	4.4
• Existing Reserves/Reserve Funds	4.5
• Debenture Financing	4.6
• Infrastructure Ontario	4.7

4.2 Development Charges Act, 1997

Development charges are a revenue tool used by municipalities to recover the capital costs associated with new development and redevelopment. These costs are in addition to what a developer/builder normally constructs as part of their subdivision (i.e. Local Services). Empowered by the *Development Charges Act, 1997*, municipalities may pass by-laws to impose charges to recover the capital costs associated with development and redevelopment.

The Township currently imposes Development Charges via by-law 21-05-1382. Capital projects associated with new development were included in the Township's background study. To the extent these projects are growth-related, this rate study has identified Development Charges as the funding source. The *Development Charges Act* includes a number of mandatory exemptions from the charges and as such, some level of funding from the water and wastewater rates will be required for financing the growth-related capital projects.

As part of the Development Charges By-law, Council approved a discretionary reduction in the charges for water and wastewater. For a single detached dwelling, the calculated development charge was $1,182 for water and $7,192 for wastewater. Based on the recommendation of Council, the approved development charge was $1,000 for water and $1,500 for wastewater. For non-residential development, the calculated development charge was $0.59 per sq.ft. for water and $3.57 per sq.ft. for wastewater. Based on the recommendation of Council, the approved development charge was $0.50 per sq.ft. for water and $1.00 per sq.ft. for wastewater. Council may consider removing this discretionary exemption at any time via an amendment to the Development Charges By-law.

Since the inception of the revised *Development Charges Act*, in 1997, the province has expanded the number of mandatory exemptions and discounts required for new

development. Should the mandatory exemptions and discounts continue to change with new legislation, the Township may need to reexamine timing of capital projects to ensure adequate funding is available.

4.3 Municipal Act

Part XII of the *Municipal Act* provides municipalities with broad powers to impose fees and charges via passage of a by-law. These powers, as presented in s.391(1), include imposing fees or charges:

- "for services or activities provided or done by or on behalf of it;
- for costs payable by it for services or activities provided or done by or on behalf of any other municipality or local board; and
- for the use of its property including property under its control."

Restrictions are provided to ensure that the form of the charge is not akin to a poll tax. Any charges not paid under this authority may be added to the tax roll and collected in a like manner. The fees and charges imposed under this part are not appealable to the Ontario Land Tribunal ((OLT) formerly Local Planning Appeal Tribunal (LPAT), formerly O.M.B.).

Section 221 of the previous *Municipal Act* permitted municipalities to impose charges, by by-law, on owners or occupants of land who would or might derive benefit from the construction of sewage (storm and sanitary) or water works being authorized (in a specific benefit area). For a by-law imposed under this section of the previous Act:

- A variety of different means could be used to establish the rate and recovery of the costs and could be imposed by a number of methods at the discretion of Council (i.e. lot size, frontage, number of benefiting properties, etc.);
- Rates could be imposed with respect to costs of major capital works, even though an immediate benefit was not enjoyed;
- Non-abutting owners could be charged;
- Recovery was authorized against existing works, where a new water or sewer main was added to such works, "notwithstanding that the capital costs of existing works has in whole or in part been paid;"
- Charges on individual parcels could be deferred;
- Exemptions could be established;

- Repayment was secured; and
- OLT approval was not required.

While under the new *Municipal Act* no provisions are provided specific to the previous s.221, the intent to allow capital cost recovery through fees and charges is embraced within s.391. The new *Municipal Act* also maintains the ability of municipalities to impose capital charges for water and sewer services on landowners not receiving an immediate benefit from the works. Under s.391(2) of the Act, "a fee or charge imposed under subsection (1) for capital costs related to sewage or water services or activities may be imposed on persons not receiving an immediate benefit from the services or activities but who will receive a benefit at some later point in time." Also, capital charges imposed under s.391 are not appealable to the OLT on the grounds that the charges are "unfair or unjust."

Section 222 of the previous *Municipal Act* permitted municipalities to pass a by-law requiring buildings to connect to the municipality's sewer and water systems, charging the owner for the cost of constructing services from the mains to the property line. Under the new *Municipal Act*, this power still exists under Part II, General Municipal Powers (s.9 (3) b of the *Municipal Act*). Enforcement and penalties for this use of power are contained in s.427 (1) of the *Municipal Act*.

Under the previous *Local Improvement Act*:

- A variety of different types of works could be undertaken, such as watermain, storm and sanitary sewer projects, supply of electrical light or power, bridge construction, sidewalks, road widening and paving;
- Council could pass a by-law for undertaking such work on petition of a majority of benefiting taxpayers, on a 2/3 vote of Council and on sanitary grounds, based on the recommendation of the Minister of Health. The by-law was required to go to the OLT, which might hold hearings and alter the by-law, particularly if there were objections;
- The entire cost of a work was assessed only upon the lots abutting directly on the work, according to the extent of their respective frontages, using an equal special rate per metre of frontage; and
- As noted, this Act was repealed as of April 1, 2003; however, O. Reg. 119/03 was enacted on April 19, 2003 which restores many of the previous *Local*

Improvement Act provisions; however, the authority is now provided under the *Municipal Act*.

4.4 Historical Grant Funding Availability

Phase 1 (April 1, 2016 to March 31, 2018)

Funding was provided by the Government of Canada to expressly help municipalities with repair and rehabilitation projects. Funding was mainly provided through the Clean Water and Wastewater Fund (C.W.W.F.) and Public Transit Infrastructure Fund (P.T.I.F.) in Federal Phase 1 projects. The C.W.W.F. was announced in Ontario on September 15, 2016. The Fund was $1.1 billion for water, wastewater, and storm water systems in Ontario. The federal government provided $569 million and Ontario and municipal governments provided $275 million each.

Over 1,300 water, wastewater, and storm water projects have been approved in Ontario through the C.W.W.F. In Ontario, P.T.I.F. accounted for nearly $1.5 billion of the national total of $3.4 billion. The program was allocated by ridership numbers from the Canadian Urban Transit Association. The Association of Municipalities of Ontario (A.M.O.) understands that $1 billion of Ontario's share has been approved.

Phase 2: Next Steps

The federal government announced Phase 2 of its infrastructure funding plan with a total of $180 billion spent over 11 years. In addition to the balance of funding for previous green, social, and public transit infrastructure funds ($20 billion each, including Phase 1), the government added $10.1 billion for trade and transportation infrastructure and $2 billion for rural and northern communities.

In Phase 2, Ontario was eligible for $11.8 billion including $8.3 billion for transit, $2.8 billion for green infrastructure, $407 million for community, culture and recreation and $250 million for rural and northern communities.

Canada Community-Building Fund

The Canada Community-Building Fund is a permanent source of funding provided up front, twice-a-year, to Provinces and Territories, who in turn flow this funding to their municipalities to support local infrastructure priorities. Municipalities can pool, bank and

borrow against this funding, providing significant financial flexibility. Every year, the Canada Community-Building Fund provides over $2 billion and supports approximately 2,500 projects in communities across Canada. Each municipality selects how best to direct the funds with the flexibility provided to make strategic investments across 18 different project categories, which include other water and wastewater servicing.

Ontario Government

The Province has taken steps to increase municipal infrastructure funding. The Ontario Community Infrastructure Fund (O.C.I.F.) was increased in 2016 with formula-based support growing to $200 million, and application funding growing to $100 million annually by 2018/2019. As well, $15 million annually will go to the new Connecting Links program to help pay for the construction and repair costs of municipal roads that connect communities to provincial highways. This is on top of the Building Ontario Up investment of $130 billion in public infrastructure over 10 years starting in 2015.

Recently the Province announced funding through a new Ontario Infrastructure Bank. This new, arms-length, board-governed agency will assist investors and institutions to further participate in large-scale infrastructure projects. Ontario is providing $825 million over three years towards the Housing-Enabling Water Systems Fund, which will help municipalities repair, rehabilitate and expand drinking water, wastewater and stormwater infrastructure needed to build more homes.

4.5 Existing Reserves/Reserve Funds

The Township has established reserves and reserve funds for water and wastewater costs. The following table summarizes the water and wastewater reserves utilized in this analysis and their respective balances at December 31, 2023:

Table 4-1
Water and Wastewater Reserves and Reserve Funds
As of December 31, 2023

Reserve	Dec. 31 2023
Water	
Capital Reserve	**235,724**
Development Charges Reserve Fund	**15,000**
Wastewater	
Development Charges Reserve Fund	**12,000**
Sewer Upgrading Reserve	**-**
Sewage System Debenture Reserve	**26,504**

4.6 Debenture Financing

Although it is not a direct method of minimizing the overall cost to the ratepayer, debentures are used by municipalities to assist in cash flowing large capital expenditures.

The Ministry of Municipal Affairs regulates the level of debt incurred by Ontario municipalities, through its powers established under the *Municipal Act*. Ontario Regulation 403/02 provides the current rules respecting municipal debt and financial obligations. Through the rules established under these regulations, a municipality's debt capacity is capped at a level where no more than 25% of the municipality's own purpose revenue may be allotted for servicing the debt (i.e. debt charges). The Township of Whitewater Region's 2024 calculation on debt capacity is provided in the Annual Repayment Limit statement provided by the Province (Ministry of Municipal Affairs and Housing). This calculates to the Township's estimated annual repayment limit of approximately $1.55 million. Based upon 20-year financing at an assumed rate of 4.0%, the available debt for the Township is approximately $21.13 million.

4.7 Infrastructure Ontario

Infrastructure Ontario (I.O.) is an arms-length crown corporation, which supports the Ontario government's goals of modernizing and maximizing the value of public infrastructure. Its lending program was established as a tool to offer low-cost and longer-term financing to assist municipalities in modernizing and renewing their

infrastructure. I.O. combines the infrastructure renewal needs of municipalities into an infrastructure investment "pool." I.O. will raise investment capital to finance loans to the public sector by selling Infrastructure Renewal Bonds to individual and institutional investors.

I.O. provides access to infrastructure capital that would not otherwise be available to smaller borrowers. Larger borrowers receive longer loan terms than they could get in the financial markets. They can also save on costs such as legal fees and underwriting commissions. Under the I.O. approach, all borrowers receive the same low interest rate. I.O. will enter into a financial agreement with each municipality, subject to technical and credit reviews, for a loan up to the maximum amount of the loan request.

To be eligible to receive these loans, municipalities must submit a formal application along with pertinent financial information. Allotments are prioritized and distributed based upon the Province's assessment of need.

4.7.1 Housing-Enabling Water Infrastructure Lending Stream

On November 28, 2024, the Province and I.O. announced the Housing-Enabling Water Infrastructure (H.E.W.I.) lending stream. This lending stream will provide up to $1.0 billion in loans to municipalities for projects to construct, expand, and rehabilitate drinking water, wastewater, and stormwater infrastructure to enable new housing development. Eligible projects under this stream include:

- Potable Water Assets: Treatment plants, reservoirs, local pipes, distribution system watermains, municipal service lines, and pump stations.
- Wastewater Assets: Lagoon systems, pump stations, lift stations, linear assets, treatment plants, storage tanks, and collection systems.
- Stormwater Assets: Management facilities and linear assets such as conveyance piping, ditches, and culverts.

Key features of this lending stream include lower interest rates, the option to defer interest payments during the construction phase of a project, and extended amortization periods (up to 40 years). Additionally, municipalities have the flexibility to issue multiple debentures in sequence over the 40-year period (i.e., split terms during debentures) and to pay down the principal between sequential debentures. This program started accepting applications on December 2, 2024, and is being administered on a "first-come-first-served" basis until the maximum program amount is reached.

4.8 Recommended Capital Financing Approach

Of the various funding alternatives provided in this section, the following are recommended for further consideration by the Township of Whitewater Region for the capital expenditures (inflated) provided in Chapter 2.

Table 4-2
Township of Whitewater Region
Capital Forecasting Financing Sources
Inflated $

Description	Water	Wastewater
Capital Financing		
Provincial/Federal Grants	-	-
Development Charges Reserve Fund	156,000	104,000
Non-Growth Related Debenture Requirements	4,936,000	1,002,000
Growth Related Debenture Requirements	-	-
Operating Contributions	-	77,000
Water Reserve	2,198,000	-
Sewage System Debenture	-	-
Wastewater Reserve	-	1,487,000
Total Capital Financing	**7,290,000**	**2,670,000**

Tables 4-3 and 4-4 provide for the full capital expenditure and funding program by year for water and wastewater, respectively.

Table 4-3
Capital Budget Forecast – Water (inflated $)

Description	Total	Forecast									
		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Expenditures:											
Beachburg Water Treatment Plant											
Decommission Well #1 & new drilled well	225,000	-	-	-	-	-	225,000	-	-	-	-
Chemical Treatment: Replace metering pumps	17,000	8,000	-	-	9,000	-	-	-	-	-	-
Chlorine Storage Tank and Chlorine Day Tank	8,000	-	-	8,000	-	-	-	-	-	-	-
Alum Storage Tank and Alum Day Tank	13,000	-	-	13,000	-	-	-	-	-	-	-
Replace Control Values (2)	11,000	-	-	-	-	-	11,000	-	-	-	-
Replace Manual Values (Butterfly, Gate, and Ball)	11,000	-	-	-	-	-	11,000	-	-	-	-
SCADA/PLC Program Replacement	46,000	-	-	-	-	-	-	46,000	-	-	-
Haley Water Treatment Plant	-	-	-	-	-	-	-	-	-	-	-
Flow Meters (2) Replacement	17,000	-	-	-	-	-	17,000	-	-	-	-
Cobden Water Treatment Plant	-	-	-	-	-	-	-	-	-	-	-
Filtration Compressor Replacement	16,000	-	-	16,000	-	-	-	-	-	-	-
Filtration Flash Mixers Replacement (4)	15,000	-	-	-	15,000	-	-	-	-	-	-
Chemical Process Pumps (4) and Diaphragm Pumps (6) Replacement	32,000	12,000	-	-	-	13,000	-	-	-	7,000	-
Level Monitoring	11,000	-	-	-	11,000	-	-	-	-	-	-
Water Tower Storage Tank: Recoating	1,910,000	-	-	1,910,000	-	-	-	-	-	-	-
Cobden WTP Upgrade Project	2,165,000	-	-	-	2,165,000	-	-	-	-	-	-

Table 4-3 (Cont'd)
Capital Budget Forecast – Water (inflated $)

Description	Total	Forecast									
		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Miscellaneous	-	-	-	-	-	-	-	-	-	-	-
Crawford Street (Water)	624,000	-	624,000	-	-	-	-	-	-	-	-
Hume Street (Water)	325,000	-	-	-	325,000	-	-	-	-	-	-
Stewart Street (Water)	130,000	-	-	-	130,000	-	-	-	-	-	-
Meadow Street (Water)	453,000	-	-	-	-	453,000	-	-	-	-	-
Beachburg Road (Water)	408,000	408,000	-	-	-	-	-	-	-	-	-
Water Meters - Comm	130,000	-	130,000	-	-	-	-	-	-	-	-
Water Meters - Res	527,000	-	-	-	-	-	-	-	527,000	-	-
Studies:	-	-	-	-	-	-	-	-	-	-	-
Water Master Servicing Plan	156,000	-	156,000	-	-	-	-	-	-	-	-
Financial Plan and Rate Study	40,000	-	-	-	-	19,000	-	-	-	-	21,000
Total Capital Expenditures	**7,290,000**	**428,000**	**910,000**	**1,947,000**	**2,655,000**	**485,000**	**264,000**	**46,000**	**527,000**	**7,000**	**21,000**
Capital Financing											
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-
Development Charges Reserve Fund	156,000	-	156,000	-	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	4,936,000	-	408,000	1,910,000	2,165,000	453,000	-	-	-	-	-
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-
Water Reserve	2,198,000	428,000	346,000	37,000	490,000	32,000	264,000	46,000	527,000	7,000	21,000
Total Capital Financing	**7,290,000**	**428,000**	**910,000**	**1,947,000**	**2,655,000**	**485,000**	**264,000**	**46,000**	**527,000**	**7,000**	**21,000**

Table 4-4
Capital Budget Forecast – Wastewater (inflated $)

Description	Total	Forecast									
		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Expenditures											
Cobden Wastewater Treatment Plant											
Bar Screen Replacement/Upgrade (2)	265,000	-	-	265,000	-	-	-	-	-	-	-
Inlet Concrete Channel Repair	10,000	10,000	-	-	-	-	-	-	-	-	-
Flow Equalization Tank Inspection and Replacement	48,000	-	-	-	-	-	-	25,000	23,000	-	-
Rotary Drum Screen Rehabilitation	11,000	-	-	11,000	-	-	-	-	-	-	-
Compacting Screw Conveyor Replacement (2)	57,000	-	-	-	-	-	-	57,000	-	-	-
Fine Bubble Aeration System Replacement	92,000	-	-	-	-	-	-	92,000	-	-	-
Membrane Filter Replacements	902,000	-	-	902,000	-	-	-	-	-	-	-
Chain falls, hoists, cranes, and other lifting devices	31,000	31,000	-	-	-	-	-	-	-	-	-
Permeate Rotary Lobe Pump Replacements	36,000	36,000	-	-	-	-	-	-	-	-	-
Chemical Pump Replacements	17,000	-	-	-	-	-	-	17,000	-	-	-
SCADA Overhaul	22,000	-	-	-	22,000	-	-	-	-	-	-
Old Building Upgrades	156,000	-	156,000	-	-	-	-	-	-	-	-
Pump VFDs Replacements (19)	89,000	-	-	-	-	-	-	-	29,000	30,000	30,000
Simpson Street (Sanitary)	233,000	-	-	-	233,000	-	-	-	-	-	-
Meadow Street (Sanitary)	243,000	-	-	-	-	243,000	-	-	-	-	-
Water Meters - Comm	62,000	-	62,000	-	-	-	-	-	-	-	-
Water Meters - Res	252,000	-	-	-	-	-	-	-	252,000	-	-
Studies:											
Wastewater Master Servicing Plan	104,000	-	104,000	-	-	-	-	-	-	-	-
Water & Wastewater Rate Study	40,000	-	-	-	-	19,000	-	-	-	-	21,000
Total Capital Expenditures	**2,670,000**	**77,000**	**322,000**	**1,178,000**	**255,000**	**262,000**	**-**	**191,000**	**304,000**	**30,000**	**51,000**
Capital Financing											
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-
Development Charges Reserve Fund	104,000	-	104,000	-	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	1,002,000	-	-	1,002,000	-	-	-	-	-	-	-
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	77,000	77,000	-	-	-	-	-	-	-	-	-
Sewage System Debenture	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	1,487,000	-	218,000	176,000	255,000	262,000	-	191,000	304,000	30,000	51,000
Total Capital Financing	**2,670,000**	**77,000**	**322,000**	**1,178,000**	**255,000**	**262,000**	**-**	**191,000**	**304,000**	**30,000**	**51,000**

Chapter 5
Overview of Expenditures and Revenues

5. Overview of Expenditures and Revenues

5.1 Water Operating Expenditures

In this report, the forecast water budget figures (2026 to 2034) are based on the 2024 and 2025 operating budgets. The costs for each component of the operating budget have been reviewed with staff to establish forecast inflationary adjustments. Annual water operating expenditures are assumed to increase by 2% per annum, while expenditures related to utilities, fuels, chemicals and other materials are assumed to increase by 5% per annum.

Annual contributions have been provided to the capital reserves over the forecast period in order to minimize the need for additional debt to finance the capital program. As noted in Section 3 of this report, the Township's annual lifecycle replacement cost is $1.17 million. Although this amount should be spent or saved annually, the immediate impact on the rates would be substantial. As a result, the rate analysis includes lifecycle contributions (as part of transfers to the capital reserve fund) that begin in 2026 and incrementally increase. Based on these incremental increases, the Township will achieve their annual contribution amounts by 2037.

5.2 Water Operating Revenues

The Township has various revenue sources to help contribute towards operating expenditures. These revenues including penalty on water, fire department usage, water connect/disconnect fees, Ontario Community Infrastructure Fund (OCIF) grants, metered revenue, etc. These revenues are assumed to increase at 2% per year. The OCIF grants have been forecasted based on discussion with staff. Tables 5-1 provides for the operating budget for the water system.

Table 5-1
Operating Budget Forecast – Water (inflated $)

Description	Forecast									
	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Expenditures										
Operating Costs										
Water Meter Operating Costs							(23,271)	(37,883)	(33,959)	(31,727)
Water Fund Expenditures - Administration										
Water Insurance	32,150	32,800	33,500	34,200	34,900	35,600	36,300	37,000	37,700	38,500
WATER - Services & Rents	-	-	-	-	-	-	-	-	-	-
WATER - Contracts	491,100	500,900	510,900	521,100	531,500	542,100	552,900	564,000	575,300	586,800
WATER - Contract Management	86,700	88,400	90,200	92,000	93,800	95,700	97,600	99,600	101,600	103,600
WATER - Call-ins	12,000	12,200	12,400	12,600	12,900	13,200	13,500	13,800	14,100	14,400
WATER - PIL	11,150	11,400	11,600	11,800	12,000	12,200	12,400	12,600	12,900	13,200
Water Treatment Plants										
WATER PLANTS - Salary	18,950	19,300	19,700	20,100	20,500	20,900	21,300	21,700	22,100	22,500
WATER PLANTS - Benefits	3,850	3,900	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700
WATER PLANTS - Payroll Deductions	1,200	1,220	1,240	1,260	1,290	1,320	1,350	1,380	1,410	1,440
WATER PLANTS - WSIB	625	640	650	660	670	680	690	700	710	720
WATER PLANTS - Hydro	50,400	52,900	55,500	58,300	61,200	64,300	67,500	70,900	74,400	78,100
WATER PLANTS - Gas/Heating	24,000	25,200	26,500	27,800	29,200	30,700	32,200	33,800	35,500	37,300
WATER PLANTS - Equipment Repairs	57,600	58,800	60,000	61,200	62,400	63,600	64,900	66,200	67,500	68,900
WATER PLANTS - Building Repairs & Maintenance	43,500	44,400	45,300	46,200	47,100	48,000	49,000	50,000	51,000	52,000
WATER PLANTS - Miscellaneous	13,000	13,300	13,600	13,900	14,200	14,500	14,800	15,100	15,400	15,700
WATER PLANTS - Capital Expenditure	15,000	15,300	15,600	15,900	16,200	16,500	16,800	17,100	17,400	17,700
Water Distribution										
WATER DIST - Salary	18,950	19,300	19,700	20,100	20,500	20,900	21,300	21,700	22,100	22,500
WATER DIST - Benefits	3,850	3,900	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700
WATER DIST - Payroll Deductions	1,200	1,220	1,240	1,260	1,290	1,320	1,350	1,380	1,410	1,440
WATER DIST - WSIB	625	640	650	660	670	680	690	700	710	720
WATER DIST - Materials/Supplies	10,000	10,500	11,000	11,600	12,200	12,800	13,400	14,100	14,800	15,500
WATER DIST - Watermain Line Repa	7,000	7,100	7,200	7,300	7,400	7,500	7,700	7,900	8,100	8,300
WATER DIST - Paving for Waterbrea	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800
WATER DIST - Miscellaneous	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
WATER DIST - Capital Exp	13,000	13,300	13,600	13,900	14,200	14,500	14,800	15,100	15,400	15,700
Sub Total Operating	**927,850**	**948,820**	**970,480**	**992,640**	**1,015,320**	**1,038,600**	**1,039,209**	**1,049,277**	**1,078,381**	**1,106,493**

Table 5-1 (Cont'd)
Operating Budget Forecast – Water (inflated $)

Description	Forecast									
	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital-Related										
Existing Debt (Principal) - Growth Related	-	-	-	-	-	-	-	-	-	-
Existing Debt (Interest) - Growth Related	-	-	-	-	-	-	-	-	-	-
New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Existing Debt (Principal) - Non-Growth Related	121,675	127,109	132,807	138,765	144,993	117,997	158,314	154,004	161,033	89,164
Existing Debt (Interest) - Non-Growth Related	85,875	80,413	74,715	68,757	62,528	50,355	49,208	42,190	35,161	28,690
New Non-Growth Related Debt (Principal)	-	-	6,918	39,599	78,009	89,044	92,873	96,866	101,032	105,376
New Non-Growth Related Debt (Interest)	-	-	17,544	99,377	190,769	206,893	203,065	199,071	194,906	190,561
Transfer to Capital	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	373,635	451,648	485,863	433,864	370,629	453,425	512,788	618,539	699,565	865,862
Sub Total Capital Related	**581,185**	**659,170**	**717,846**	**780,362**	**846,929**	**917,714**	**1,016,247**	**1,110,671**	**1,191,696**	**1,279,653**
Total Expenditures	**1,509,035**	**1,607,990**	**1,688,326**	**1,773,002**	**1,862,249**	**1,956,314**	**2,055,456**	**2,159,948**	**2,270,077**	**2,386,146**
Revenues										
WATER - Bulk Water Charges	-	-	-	-	-	-	-	-	-	-
OCIF Grant	100,502	123,238	123,238	123,238	123,238	123,238	123,238	123,238	123,238	123,238
Metered Revenue	42,150	44,257	46,470	48,793	51,233	53,795	56,485	59,309	62,274	65,388
Fire Department Usage	10,000	10,200	10,404	10,612	10,824	11,041	11,262	11,487	11,717	11,951
Water Connect/Disconnect Fees	2,000	2,040	2,081	2,122	2,165	2,208	2,252	2,297	2,343	2,390
Penalty on Water/Sewer	6,400	6,528	6,659	6,792	6,928	7,066	7,207	7,352	7,499	7,649
Contributions from Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**161,052**	**186,263**	**188,851**	**191,557**	**194,388**	**197,348**	**200,444**	**203,682**	**207,070**	**210,615**
Water Billing Recovery - Total	**1,347,983**	**1,421,727**	**1,499,475**	**1,581,444**	**1,667,861**	**1,758,966**	**1,855,012**	**1,956,266**	**2,063,007**	**2,175,531**

5.3 Wastewater Operating Expenditures

Annual wastewater operating expenditures are assumed to increase by 2% per annum, while expenditures related to utilities, fuels, chemicals and other materials have been increased at 5% per annum.

Debenture expenditures and transfers to the capital reserve fund are also included in the operating budget. As noted in Section 3 of this report, the Township's annual lifecycle replacement cost is $550,000. Although this amount should be spent or saved annually, the immediate impact on the rates would be substantial. As a result, the rate analysis includes lifecycle contributions (as part of transfers to the capital reserve fund) that begin in 2026 and incrementally increase. Based on these incremental increases, the Township will achieve their annual contribution amounts by 2035.

5.4 Wastewater Operating Revenues

The operating revenue for the wastewater program comes mainly from flat rate charges and penalties on sewer users, with additional volumetric revenue from metered customers. Revenue is also generated from the OCIF grants. Table 5-2 outlines the operating budget for the Whitewater Region wastewater system.

Table 5-2
Operating Budget Forecast – Wastewater (inflated $)

Description	Forecast									
	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Expenditures										
Operating Costs										
Water Meter Operating Costs							(11,129)	(18,117)	(16,241)	(15,173)
Sewer Collection										
SEWER DIST - Salary	7,375	7,500	7,700	7,900	8,100	8,300	8,500	8,700	8,900	9,100
SEWER DIST - Benefits	1,500	1,530	1,560	1,590	1,620	1,650	1,680	1,710	1,740	1,770
SEWER DIST - Payroll Deductions	450	460	470	480	490	500	510	520	530	540
SEWER DIST - WSIB	250	260	270	280	290	300	310	320	330	340
SEWER DIST - Materials/Supplies	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	1,900
SEWER DIST - Sanitary Main/Line Re	12,500	12,800	13,100	13,400	13,700	14,000	14,300	14,600	14,900	15,200
SEWER DIST - Sewer Line Maintenan	22,500	23,000	23,500	24,000	24,500	25,000	25,500	26,000	26,500	27,000
SEWER DIST - Miscellaneous	500	510	520	530	540	550	560	570	580	590
Sewer Treatment Plant										
SEWER PLANT - Salary	7,375	7,500	7,700	7,900	8,100	8,300	8,500	8,700	8,900	9,100
SEWER PLANT - Benefit	1,500	1,530	1,560	1,590	1,620	1,650	1,680	1,710	1,740	1,770
SEWER PLANT - Payroll Deductions	450	460	470	480	490	500	510	520	530	540
SEWER PLANT - WSIB	250	260	270	280	290	300	310	320	330	340
SEWER PLANT - Insurance	11,275	11,500	11,700	11,900	12,100	12,300	12,500	12,800	13,100	13,400
SEWER PLANT - Equipment Repairs & Maintenance	25,000	25,500	26,000	26,500	27,000	27,500	28,100	28,700	29,300	29,900
SEWER PLANT - Hydro	127,100	133,500	140,200	147,200	154,600	162,300	170,400	178,900	187,800	197,200
SEWER PLANT - Gas/Heating	12,000	12,600	13,200	13,900	14,600	15,300	16,100	16,900	17,700	18,600
SEWER PLANT - Building Repairs & Maintenance	14,500	14,800	15,100	15,400	15,700	16,000	16,300	16,600	16,900	17,200
SEWER PLANT - Contract Operating	393,750	401,600	409,600	417,800	426,200	434,700	443,400	452,300	461,300	470,500
SEWER PLANT - Contract Management	69,500	70,900	72,300	73,700	75,200	76,700	78,200	79,800	81,400	83,000
SEWER PLANT - Call-ins	12,000	12,200	12,400	12,600	12,900	13,200	13,500	13,800	14,100	14,400
SEWER PLANT - Miscellaneous	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800
SEWER PLANT - PIL Sewer Plant	44,500	45,400	46,300	47,200	48,100	49,100	50,100	51,100	52,100	53,100
SEWER PLANT - Capital	77,000	78,500	80,100	81,700	83,300	85,000	86,700	88,400	90,200	92,000
Sub Total Operating	**852,275**	**873,610**	**895,620**	**918,230**	**941,640**	**965,650**	**979,331**	**997,953**	**1,026,039**	**1,054,117**

Figure 5-2 (Cont'd)
Operating Budget Forecast – Wastewater (inflated $)

Description	Forecast									
	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital-Related										
Existing Debt (Principal) - Growth Related	-	-	-	-	-	-	-	-	-	-
Existing Debt (Interest) - Growth Related	-	-	-	-	-	-	-	-	-	-
New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Existing Debt (Principal) - Non-Growth Related	147,900	152,356	156,988	161,760	166,678	171,746	176,969	173,807	179,043	184,437
Existing Debt (Interest) - Non-Growth Related	170,100	165,590	160,959	156,186	151,268	146,200	140,978	135,672	130,436	125,042
New Non-Growth Related Debt (Principal)	-	-	-	89,534	93,384	97,399	101,587	105,956	110,512	115,264
New Non-Growth Related Debt (Interest)	-	-	-	35,856	32,006	27,990	23,802	19,434	14,878	10,126
Transfer to Capital	77,000	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	189,138	331,275	363,926	273,020	309,244	333,717	355,893	382,452	391,957	402,368
Sub Total Capital Related	**584,138**	**649,222**	**681,873**	**716,356**	**752,580**	**777,053**	**799,228**	**817,320**	**826,825**	**837,237**
Total Expenditures	**1,436,413**	**1,522,832**	**1,577,493**	**1,634,586**	**1,694,220**	**1,742,703**	**1,778,559**	**1,815,273**	**1,852,864**	**1,891,354**
Revenues										
OCIF Grant	278,318	312,406	312,406	312,406	312,406	312,406	312,406	312,406	312,406	312,406
Penalty on Water/Sewer	7,600	7,800	8,000	8,200	8,400	8,600	8,800	9,000	9,200	9,400
Metered Revenue	104,517	108,698	113,046	117,567	122,270	125,938	128,457	131,026	133,647	136,320
Contributions from Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**390,435**	**428,903**	**433,451**	**438,173**	**443,076**	**446,944**	**449,663**	**452,432**	**455,252**	**458,125**
Wastewater Billing Recovery - Total	**1,045,978**	**1,093,928**	**1,144,041**	**1,196,413**	**1,251,144**	**1,295,759**	**1,328,896**	**1,362,841**	**1,397,612**	**1,433,228**

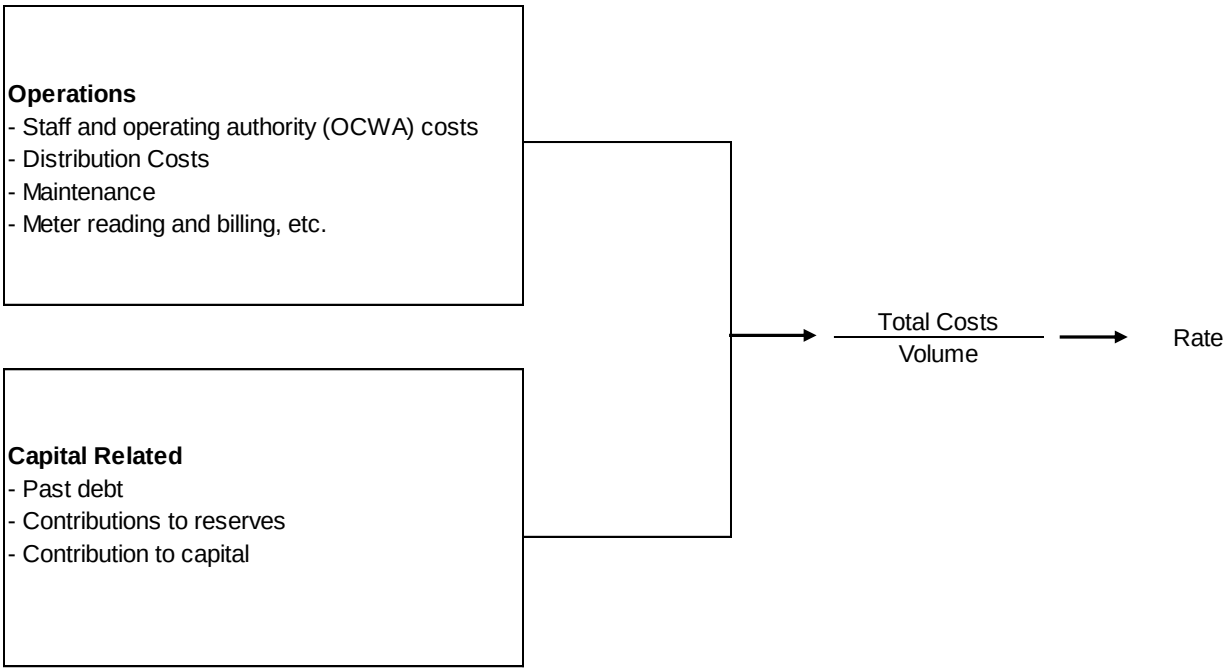
Chapter 6
Pricing Structures

6. Pricing Structures

6.1 Introduction

Rates, in their simplest form, can be defined as total costs to maintain the utility function divided by the total expected volume to be generated for the period. Total costs are usually a combination of operating costs (e.g. staff costs, distribution costs, maintenance, administration, etc.) and capital-related costs (e.g. past debt to finance capital projects, transfers to reserves to finance future expenditures, etc.). The schematic below provides a simplified illustration of the rate calculation for water.

"Annual Costs"



These operating and capital expenditures will vary over time. Examples of factors that will affect the expenditures over time are provided below.

Operations

- Inflation;
- Increased maintenance as system ages; and
- Changes to provincial legislation.

Capital Related

- New capital will be built as areas expand;
- Replacement capital needed as system ages; and
- Financing of capital costs are a function of policy regarding reserves and direct financing from rates (pay as you go), debt and user pay methods (development charges, *Municipal Act*).

6.2 Alternative Pricing Structures

Throughout Ontario, and as well, Canada, the use of pricing mechanisms varies between municipalities. The use of a particular form of pricing depends upon numerous factors, including Council preference, administrative structure, surplus/deficit system capacities, economic/demographic conditions, to name a few.

Municipalities within Ontario have two basic forms of collecting revenues for water purposes, those being through incorporation of the costs within the tax rate charged on property assessment and/or through the establishment of a specific water rate billed to the customer. Within the rate methods, there are various rate structures employed along with other variations:

- Non-metered
    - Flat Rate
    - Property Assessment
- Metered
    - Constant Rate
    - Declining Block Rate
    - Increasing (or Inverted) Block Rate
    - Hump Back Block Rate
    - Base Charges

The definitions and general application of the various methods are as follows:

Property Assessment: This method incorporates the total costs of providing water into the general requisition or the assessment base of the municipality. This form of collection is a "wealth tax," as payment increases directly with the value of property owned and bears no necessary relationship to actual consumption. This form is easy to

administer as the costs to be recovered are incorporated in the calculation for all general services, normally collected through property taxes.

Flat Rate: This rate is a constant charge applicable to all customers served. The charge is calculated by dividing the total number of user households and other entities (e.g. businesses) into the costs to be recovered. This method does not recognize differences in actual consumption but provides for a uniform spreading of costs across all users. Some municipalities define users into different classes of similar consumption patterns, that is, a commercial user, residential user and industrial user, and charge a flat rate by class. Each user is then billed on a periodic basis. No meters are required to facilitate this method, but an accurate estimate of the number of users is required. This method ensures set revenue for the collection period but is not sensitive to consumption, hence may cause a shortfall or surplus of revenues collected.

Constant Rate: This rate is a volume-based rate, in which the consumer pays the same price per unit consumed, regardless of the volume. The price per unit is calculated by dividing the total cost of the service by the total volume used by total consumers. The bill to the consumer climbs uniformly as the consumption increases. This form of rate requires the use of meters to record the volume consumed by each user. This method closely aligns the revenue recovery with consumption. Revenue collected varies directly with the consumption volume.

Declining Block Rates: This rate structure charges a successively lower price for set volumes, as consumption increases through a series of "blocks." That is to say that within set volume ranges, or blocks, the charge per unit is set at one rate. Within the next volume range, the charge per unit decreases to a lower rate, and so on. Typically, the first, or first and second blocks cover residential and light commercial uses. Subsequent blocks normally are used for heavier commercial and industrial uses. This rate structure requires the use of meters to record the volume consumed by each type of user. This method requires the collection and analysis of consumption patterns by user classification to establish rates at a level which does not over or under collect revenue from rate payers.

Increasing or Inverted Block Rates: The increasing block rate works essentially the same way as the declining block rate, except that the price of water in successive blocks increases rather than declines. Under this method the consumer's bill rises faster with higher volumes used. This rate structure also requires the use of meters to

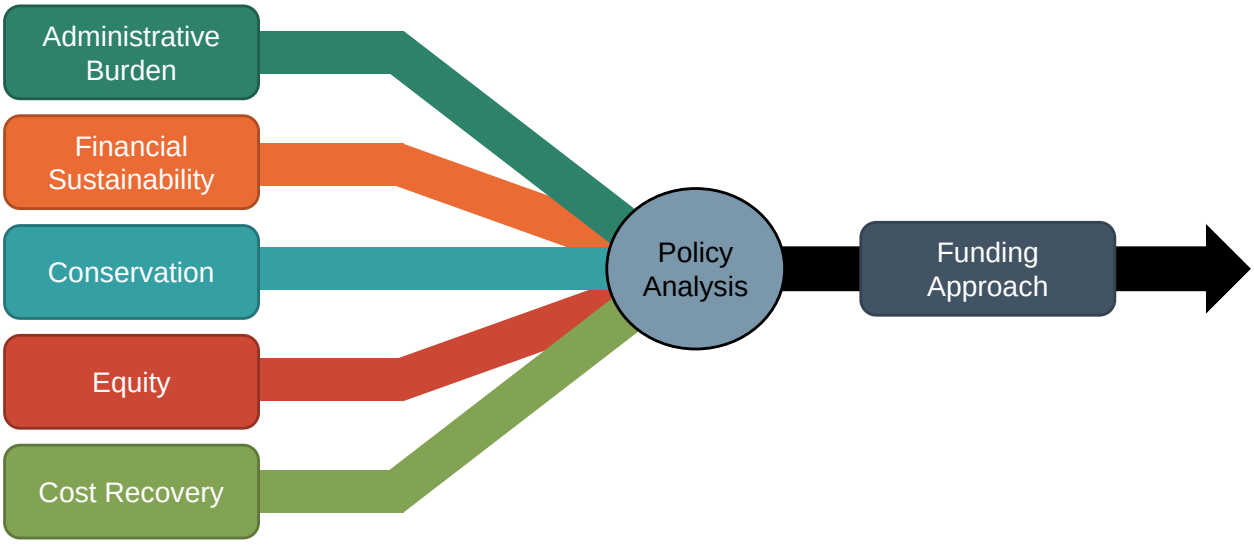
record the volume consumed by each user. This method requires, as with the declining block structure, the collection and analysis of consumption patterns by user classification to establish rates at a level which does not over or under collect from rate payers.

The Hump Back Rate: The hump back rate is a combination of an increasing block rate and the declining block rate. Under this method the consumer's bill rises with higher volumes used up to a certain level and then begins to fall for volumes in excess of levels set for the increasing block rate.

6.3 Assessment of Alternative Pricing Structures

The adoption by a municipality or utility of any one particular pricing structure is normally a function of a variety of administrative, social, demographic and financial factors. The number of factors, and the weighting each particular factor receives, can vary between municipalities. The following is a review of some of the more prevalent factors.

Figure 6-1
Factors in Assessing Rate Structures and Funding Approaches



Cost Recovery

Cost recovery is a prime factor in establishing a particular pricing structure. Costs can be loosely defined into different categories: operations, maintenance, capital, financing

and administration. These costs often vary between municipalities and even within a municipality, based on consumption patterns, infrastructure age, economic growth, etc.

The pricing alternatives defined earlier can all achieve the cost recovery goal, but some do so more precisely than others. Fixed pricing structures, such as Property Assessment and Flat Rate, are established on the value of property or on the number of units present in the municipality, but do not adjust in accordance with consumption. Thus, if actual consumption for the year is greater than projected, the municipality incurs a higher cost of production, but the revenue base remains static (since it was determined at the beginning of the year), thus potentially providing a funding shortfall. Conversely, if the consumption level declines below projections, fixed pricing structures will produce more revenue than actual costs incurred.

The other pricing methods (declining block, constant rate, increasing block) are consumption-based and generally will generate revenues in proportion to actual consumption.

Administration

Administration is defined herein as the staffing, equipment and supplies required to support the undertaking of a particular pricing strategy. This factor not only addresses the physical tangible requirements to support the collection of the revenues, but also the intangible requirements, such as policy development.

The easiest pricing structure to support is the Property Assessment structure. As municipalities undertake the process of calculating property tax bills and the collection process for their general services, the incorporation of the water costs into this calculation would have virtually no impact on the administrative process and structure.

The Flat Rate pricing structure is relatively easy to administer as well. It is normally calculated to collect a set amount, either on a monthly, quarterly, semi-annual or annual basis, and is billed directly to the customer. The impact on administration centres mostly on the accounts receivable or billing area of the municipality, but normally requires minor additional staff or operating costs to undertake.

The three remaining methods, those being Increasing Block Rate, Constant Rate and Declining Block Rate, have a more dramatic effect on administration. These methods are dependent upon actual consumption and hence involve a major structure in place to

administer. First, meters must be installed in all existing units in the municipality, and units to be subsequently built must be required to include these meters. Second, meter readings must be undertaken periodically. Hence staff must be available for this purpose or a service contract must be negotiated. Third, the billings process must be expanded to accommodate this process. Billing must be done per a defined period, requiring staff to produce the bills. Lastly, either through increased staffing or by service contract, an annual maintenance program must be set up to ensure meters are working effectively in recording consumed volumes.

The benefit derived from the installation of meters is that information on consumption patterns becomes available. This information provides benefit to administration in calculating rates which will ensure revenue recovery. Additionally, when planning what services are to be constructed in future years, the municipality or utility has documented consumption patterns distinctive to its own situation, which can be used to project sizing of growth-related works.

Equity

Equity is always a consideration in the establishment of pricing structures but its definition can vary depending on a municipality's circumstances and based on the subjective interpretation of those involved. For example: is the price charged to a particular class of rate payer consistent with those of a similar class in surrounding municipalities; through the pricing structure does one class of rate payer pay more than another class; should one pay based on ability to pay, or on the basis that a unit of water costs the same to supply no matter who consumes it; etc.? There are many interpretations. Equity therefore must be viewed broadly in light of many factors as part of achieving what is best for the municipality as a whole.

Conservation

In today's society, conservation of natural resources is increasingly being more highly valued. Controversy continuously focuses on the preservation of non-renewable resources and on the proper management of renewable resources. Conservation is also a concept which applies to a municipality facing physical limitations in the amount of water which can be supplied to an area. As well, financial constraints can encourage conservation in a municipality where the cost of providing each additional unit is increasing.

Pricing structures such as property assessment and flat rate do not, in themselves, encourage conservation. In fact, depending on the price which is charged, they may even encourage resource "squandering," either because consumers, without the price discipline, consume water at will, or the customer wants to get his money's worth and hence adopts more liberal consumption patterns. The fundamental reason for this is that the price paid for the service bears no direct relationship to the volume consumed and hence is viewed as a "tax," instead of being viewed as the price of a purchased commodity.

The Declining Block Rate provides a decreasing incentive towards conservation. By creating awareness of volumes consumed, the consumer can reduce his total costs by restricting consumption; however, the incentive lessens as more water is consumed, because the marginal cost per unit declines as the consumer enters the next block pricing range. Similarly, those whose consumption level is at the top end of a block have less incentive to reduce consumption.

The Constant Rate structure presents the customer with a linear relationship between consumption and the cost thereof. As the consumer pays a fixed cost per unit, his bill will vary directly with the amount consumed. This method presents tangible incentive for consumers to conserve water. As metering provides direct feedback as to usage patterns and the consumer has direct control over the total amount paid for the commodity, the consumer is encouraged to use only those volumes that are reasonably required.

The Inverted Block method presents the most effective pricing method for encouraging conservation. Through this method, the price per unit consumed increases as total volumes consumed grow. The consumer becomes aware of consumption through metering with the charges increasing dramatically with usage. Hence, there normally is awareness that exercising control over usage can produce significant savings. This method not only encourages conservation methods, but may also penalize legitimate high-volume users if not properly structured.

Figure 6-2 provides a schematic representation of the various rate structures (note property tax as a basis for revenue recovery has not been presented for comparison, as the proportion of taxes paid varies in direct proportion to the market value of the property). The graphs on the left-hand side of the figure present the cost per unit for each additional amount of water consumed. The right-hand side of the figure presents

the impact on the customer's bill as the volume of water increases. Following the schematic is a table summarizing each rate structure.

Figure 6-1

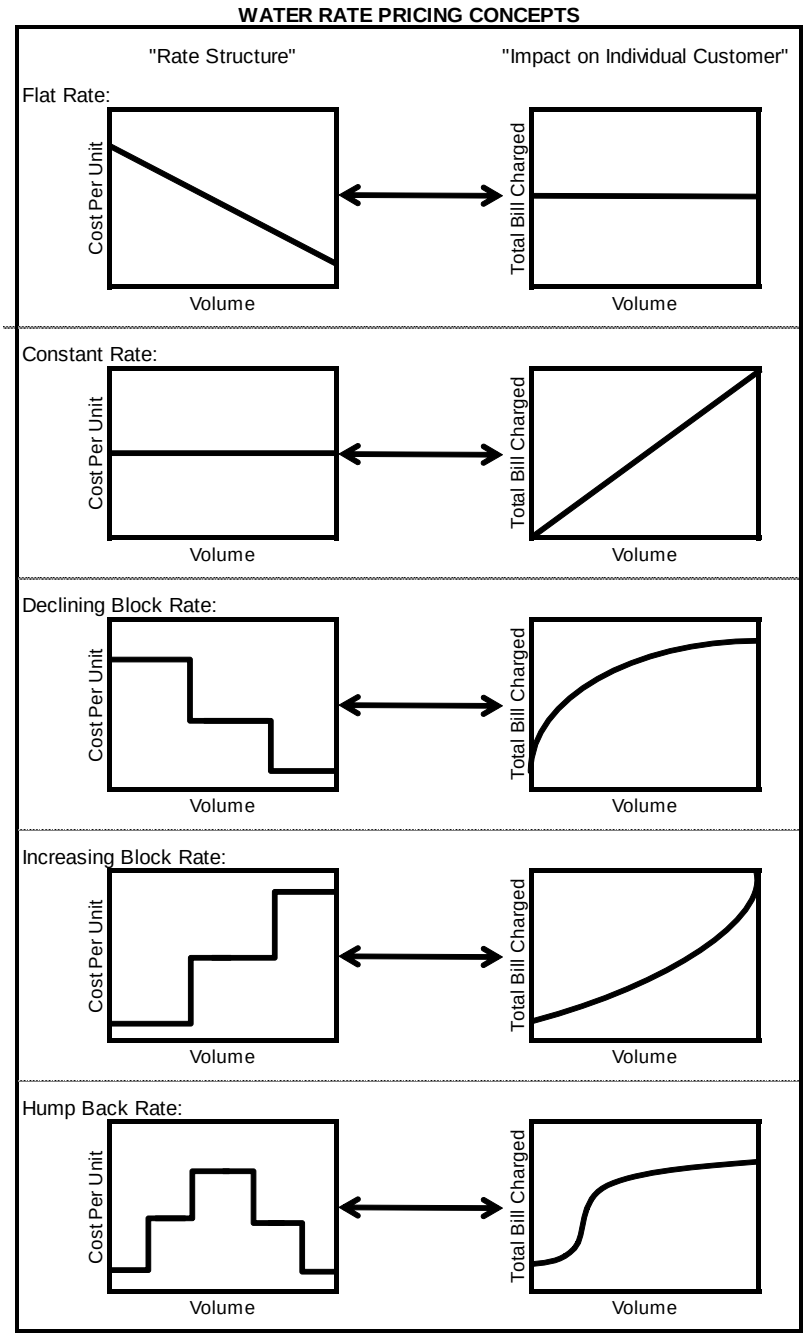


Figure 6-3
Summary of Various Rate Structures and their Impact on Customer Bills as Volume Usage Increases

Rate Structure	Cost Per Unit As Volume Increases	Impact On Customer Bill As Volume Increases
Flat Rate	Cost per unit decreases as more volume consumed	Bill remains the same no matter how much volume is consumed
Constant Rate	Cost per unit remains the same	Bill increases in direct proportion to consumption
Declining Block	Cost per unit decreases as threshold targets are achieved	Bill increases at a slower rate as volumes increase
Increasing Block	Cost per unit increases as threshold targets are achieved	Bill increases at a faster rate as volumes increase
Hump Back Rate	Combination of an increasing block at the lower consumption volumes and then converts to a declining block for the high consumption	Bill increases at a faster rate at the lower consumption amounts and then slows as volumes increase

6.4 Rate Structures in Ontario

In a past survey of over 170 municipalities (approximately half of the municipalities who provide water and/or sewer), all forms of rate structures are in use by Ontario municipalities. The most common rate structure is the constant rate (for metered municipalities). Most municipalities (approximately 92%) who have volume rate structures also impose a base monthly charge.

Historically, the development of a base charge often reflected either the recovery of meter reading/billing/collection costs, plus administration or those costs plus certain fixed costs (such as capital contributions or reserve contributions). More recently, many municipalities have started to establish base charges based on ensuring a secure

portion of the revenue stream which does not vary with volume consumption. Selection of the quantum of the base charge is a matter of policy selected by individual municipalities.

6.5 Metered Customers

The rates and structures discussed in the next section focus on the flat rate customers in the Township, however, there are three metered properties that are charged a volume rate based on the amount of water they use. Historical volumes were used to estimate the anticipated revenue for 2025. For the purposes of the calculations, the volume rates calculated are based on the annual increases required for the flat rate users.

6.6 Recommended Rate Structures

Based on the foregoing, it is recommended that the same rate structures be continued in the future until such time that meters can be installed. Recommended changes to the customer categories were provided in Section 1.9 of this report.

The needs for water are significant and over the forecast period, while the needs for wastewater are relatively minor. Additional operating expenditures and the requirement for significant capital expenditures create pressure on the financial sustainability of the water system. Hence rate increases have been balanced for the combined water/wastewater user to experience an 4% annual increase from 2026 to 2030, and a 3% annual increase every year thereafter.

Although the needs are significant for the water system, the capital reserve fund has a balance of $235,724 as of December 31, 2023. In order to meet the needs for water, it is recommended that the flat rates for all categories increase by 5% annually over the forecast period from 2026 to 2034. The flat rates are presented in Section 8.2.

As for wastewater, the Sewer Upgrading reserve has a balance of $0 as of December 31, 2023 since the balance has already been committed for future projects. In order to meet the needs for wastewater, it is recommended that the flat rates for all categories increase by 4% annually from 2026 to 2029, 3% in 2030, and 2% every year thereafter. With these rate increases, combined with the reserve balance, the Township would

need to issue non-growth-related debt to fund the Membrane Filter Replacements in 2027. The flat rates are presented in Section 8.3.

The above increases are recommended to ensure that the Township can fund the capital and operating costs while keeping the overall reserve fund balance in a positive position.

Chapter 7
Water Meters

7. Water Meters

7.1 Introduction

As part of the water and wastewater rate study, the Township requested a review of the potential costs associated with installing water meters in the Township. The Township currently has only three (3) customers with water meters who are billed based on a per cubic meter rate of their water usage. Table 7-1 presents the variable water and wastewater rates per cubic meter for 2024, and Table 7-2 presents the current volume rates for 2025.

Table 7-1
Township of Whitewater Region
Water and Wastewater Rates – 2024

2024 - Water Billing Rates		
Volume Charge		
$	2.041	per m^3

2024 - Wastewater Billing Rates		
Volume Charge		
$	4.914	per m^3

Table 7-2
Township of Whitewater Region
Water and Wastewater Rates – 2025

2025 - Water Billing Rates		
Volume Charge		
$	2.102	per m^3

2025 - Wastewater Billing Rates		
Volume Charge		
$	5.061	per m^3

The following analysis of costs for water meters assumes that the Township will purchase and install water meters for all customer units in the year 2030, with the first year of full operation being in 2031. Based on the forecasted growth in the Township, the initial capital outlay assumes the purchase of water meters for approximately 1,200 customers.

7.2 Water Meter Technologies

There are a number of water metering technologies available on the market with varying functionalities and costing. When evaluating metering technologies there are many

variables to consider including costs, the type of meter reading, functionality, materials, lifespan, warranty, etc. The main types of meters to be considered for municipalities include the following:

- **Direct Read:** manual reading through visual inspection on the odometer inside the building;
- **Remote Pulser Read:** manually read of the odometer from the outside of the building;
- **Automatic Meter Reading (A.M.R.):** A.M.R. is a system which municipalities use to automatically collect water consumption data from water meters. A visual remote on the outside of the building is wired to the water meter inside the building, and a Township staff member collects readings by tapping each remote with a collection probe, or by driving by with a data receiver in close proximity to the device;
- **Radio Frequency Read (Advanced Metering Infrastructure) (A.M.I.):** A.M.I. is a communications technology which municipalities use to collect consumption data from water meters, usually without the use of meter reading personnel. The system automatically sends the data to the Township through a fixed network of infrastructure. The meter is connected to a transponder unit transmitting the reading via a radio frequency (R.F.) signal. The transmitter is activated automatically by an outside receiver/transmitter. There are 3 ways to read this:
    - The walk by approach where a reader walks down the street and collects the R.F. signals;
    - The drive by approach where a reader drives through the Township collecting R.F. signals in a properly equipped vehicle; and
    - The fixed area network which involves installing an infrastructure system to collect meter reading signals and transmit to a central location (fully automated). This type of infrastructure allows for constant meter reads.

Remote pulse read meters, automatic meter reading meters, and radio frequency meters require two major components: the water meter inside the building, and the remote communications unit mounted on the outside of the building.

7.2.1 Advantages and Disadvantages of Metering Technologies

The following table provides a listing of the relative advantages and disadvantages of the various available technologies. Other than capital costs, there are several other

variables that need to be considered when evaluating the various options (e.g. potential operating cost reductions, administrative burden, potential for process errors, etc.).

Table 7-3
Township of Whitewater Region
Advantages and Disadvantages of Various Metering Technologies

Metering Technology	Advantages	Disadvantages
Direct Read	• Low cost per meter • Low installation cost	• Highly time consuming to individually read each meter • Less frequent reads given the time it takes to undertake meter reads • Higher labour costs • Meter reader needs access to meters inside buildings which can be difficult for a number of properties • Higher chance of meter reading errors
Remote Pulser Read	• Access to meter is not required	• Higher per meter and installation cost than direct reads • Increased maintenance of remote reader required • Time consuming • Direct access to meter remote required for reading (outside of building) • Meter reader may face obstacles accessing the remote reader (i.e., fences, pets, snow, gardens, etc.) • Higher chance of meter reading errors • Requires periodic verification between remote and actual water meter odometer
Automatic Meter Reading (A.M.R.)	<u>Touch Connection through Probe</u> • Less labour is required (increased time efficiency due to automation) • No human error in meter reading • Increased data collection due to potential for increase in frequency of reads <u>Hands-Free (Proximity)</u> • Meters can be read when in close proximity, not requiring any access to the meter or the remote reader • Less labour is required (increased time efficiency due to automation) resulting in lower operating costs • No human error in meter reading • Increased data collection due to potential for increase in frequency of reads	<u>Touch Connection through Probe</u> • Higher per meter and installation cost than prior two options • Higher maintenance cost than prior two options • Additional costs for remote readers/ remote reading software • Access to remote reader is required <u>Hands-Free (Proximity)</u> • Higher per meter and installation cost than touch connection through probe • Higher maintenance cost than touch connection through probe

Metering Technology	Advantages	Disadvantages
	Note: most A.M.R. metering technology has R.F. capabilities if the municipality chooses to invest in radio tower infrastructure at some point in the future (i.e. lower incremental costs to move to more advanced technology)	
Radio Frequency Read (A.M.I.)	<u>Walk-By Reads</u> • Lower labour costs than other metering technologies • No human error in meter reading • Increased data collection due to potential for increase in frequency of reads • Access to meter is not required <u>Drive-By Reads</u> • Lower labour costs • No human error in meter reading • Increased data collection due to potential for increase in frequency of reads • Access to meter is not required <u>Fixed Area Network</u> • Lowest labour cost • Fully automated • No human error in meter reading • Increased data collection • Access to meter is not required • Opportunity to use existing towers in the Township or lease towers	<u>Walk-By Reads</u> • Higher meter and installation costs • Requires batteries which have a shorter lifecycle than the water meters • May require the addition of a data analyst given the increased amount of data collected <u>Drive-By Reads</u> • Higher meter and installation costs • Meters require batteries which have a shorter lifecycle than the water meters (i.e. need to replace these before meter is replaced) • May require the need for an additional full time equivalent/data analyst given the significant increase in data collected and the time required to analyze such data <u>Fixed Area Network</u> • Higher meter and installation costs • Large capital investment for radio tower infrastructure • Meters require batteries which have a shorter lifecycle than the water meters • May require the need for an additional full time equivalent/data analyst given the significant increase in data collected and the time required to analyze such data

7.3 Survey of Municipalities in Ontario

A review of metering practices was undertaken for other municipalities across Ontario. In general, most municipalities operate with either remote pulse read meters or A.M.R. meters. Some municipalities with existing meters are upgrading to A.M.I meters.

As part of this review the following municipalities were surveyed:

- The Town of Renfrew – undertook an A.M.R. installation program in 2010.
- The City of Greater Sudbury – undertook a City-wide water meter replacement to upgrade from remote pulse read meters to R.F. A.M.I technology meters in 2021/2022.
- The City of North Bay – undertook a water meter installation program for the first time in 2015.
- The City of Timmins – awarded a contract for a water meter supply, installation, and implementation system in September 2024.

The findings from each municipality are as follows:

7.3.1 The Town of Renfrew

The Town of Renfrew implemented a universal water meter program in 2010. Prior to the program, the Town had meters installed for commercial customers but not residential properties. All residential accounts were billed on a flat rate every three months, while commercial accounts were billed through a combination of a base charge based on the size of the water meter, and a constant variable rate based on water consumption. Through this program, the Town implemented A.M.R. with remote drive-by readings. By implementing this technology, meter reads across the entire Town can be completed in one hour by driving around the Town to collect data through the reading equipment. Meter readings are done every month, however, billing is done every second month.

When assessing the various options as part of this water meter installation program, the Town evaluated A.M.I. radio frequency meters, but did not find it feasible due to the topography of the Town (dips and valleys require a larger number of radio towers to cover the entire land area in comparison to a relatively flat municipality). The current

billing structure is a combination of a flat rate based on the size of the water meter, and a constant variable rate based on water consumption.

Through this program, the Town was able to promote behavioural change by educating the end user on water consumption and the impact increased volumes have on the water bill. These behavioural changes in turn reduced water usage and encouraged conservation. The Town marketed the new program to residents as an opportunity to take ownership of their own water consumption wherein the less water they use, the less they are required to pay. The Town's system does not send the customer flags for continual water use or high usage, however, the system creates leak reports for Town staff to review and inform the residents if a leak is suspected. Staff also mentioned a major benefit of meter installation has been the increased data collection which has supported enhanced customer service in addition to management decision making. The program also gave the Town the opportunity to upgrade and repair curb stops, in addition to mapping out their locations.

Through this program, the Town experienced hesitation to install meters from customers. To overcome this challenge numerous public meetings were held, and information newsletters/brochures were distributed. For residents strongly refusing a water meter, the Town billed them triple the amount of a home in the same demographic to encourage meter installation.

7.3.2 The City of Greater Sudbury

Beginning in 2020, the City of Greater Sudbury began a City-wide water meter replacement program. The City's previous water meters were remote pulse read meters which were manually read from the outside of individual properties by City Staff every two months. The new program transitioned the City from this manual process into a fully automated meter read through radiofrequency A.M.I. technology. The City was able to utilize existing Greater Sudbury Utilities radio towers with excess bandwidth, but also built 6 new towers to increase the radio coverage range throughout the City. The City also developed a new customer portal where customers can check their usage in real time. The portal also has a system which flags a customer's account if continual use is detected, which typically indicates a leak. Customers are also able to set personalized alarms/notifications if their flow exceeds a certain amount in any particular billing period.

Since the meter replacement program was completed, the City has experienced a number of benefits with the new A.M.I. technology which includes labour cost savings on meter readings and enhanced customer service through the new digital portal. In addition, the City was also able to repair aging infrastructure including curb stops, add tamper detection to the new meters, and fix any previously illegally tampered systems.

The main challenges the City faced during the replacement program were the increase in costs due to COVID-19 and supply chain disruptions (microchip shortage increased radio costs) in addition to the large number of customers refusing installers to enter their home (this was heightened as a result of COVID-19).

7.3.3 The City of North Bay

Prior to 2015, the City of North Bay did not have any water meters in place. In 2015, the City implemented a full City-wide water meter installation program which included approximately 16,000 customers. Similar to Greater Sudbury, North Bay also installed A.M.I. infrastructure through radio frequency water meters. To implement this technology, the City required 8 collector towers to provide coverage across the City's entire land area.

Prior to implementing metering technology, the City billed residents on a flat rate based on the number of water fixtures in the household. With the new meters, the City bills customers through a combination of a monthly base rate based on meter size and a constant volume rate per cubic metre of water consumed. When the meters were first installed the City initially recovered 60% of costs through the base rate, and 40% of costs through the volume rate. The current rate structure provides for 50% of cost recovery through the flat rate, and 50% through the volume rate, however, Council intends to move to 40% flat rate/60% volume rate cost recovery. The phased introduction of the variable rate was done to promote equity while giving customers time to adjust to the new rate structure.

The City has experienced a number of benefits through this program. This includes operational savings and improved customer satisfaction. Customers are able to access their daily water usage through the customer portal, but unlike the City of Greater Sudbury, the portal does not flag customer accounts for high or continual usage. For liability reasons, this is the responsibility of the customer to recognize on their own. Further, the introduction of the volume-based rate provided a behavioural change

incentive to reduce water consumption. This has resulted in a lower demand on the Water Treatment Plant given the overall reduced levels of water consumption.

The biggest challenge that the City of North Bay faced with their water meter installation program was public perception and misinformation. City staff noted that change management from a public perspective was an extensive and time-consuming process. The City held numerous information sessions, town-halls, and distributed information packages on a regular basis to inform customers and ease any concerns. Another area in which the City experienced challenges was the change from flat rate billing to monthly metered billing. The transition increased the administrative burden for City staff with respect to the water bills. Between preparing the monthly bills and managing property ownership changes, staff find there is very little time to find efficiencies and improve the process before the next billing cycle begins.

7.3.4 The City of Timmins

In 2022 the City of Timmins hired Watson to undertake a cost benefit analysis of installing water meters across the City. In September of 2024, the City issued an RFP for a universal water metering system for the supply, installation, implementation, and customer portal for water meters. The City is planning a phased approach where in phase 1 the City's 39 municipal buildings will be outfitted with water meters and then phase 2 will outfit approximately 1,300 customers with new water meters to replace their existing meters. Finally, phase 3 will outfit the remaining customers in the City currently without water meters (approximately 12,000) within the next 10 years. The City has opted for A.M.I. infrastructure.

7.4 Literature Research

A review of the National Guide to Sustainable Municipal Infrastructure – Establishing a Metering Plan to Account for Water Use and Loss was conducted to better understand industry best practices regarding water metering. This report was developed based on standards from the American Water Works Association, the American Water Works Association Research Foundation, the International Water Association, and the Canadian Water and Wastewater Association.

This report identified the four drivers for universal metering in municipalities to be: equity, water efficiency and environmental stewardship, economic management

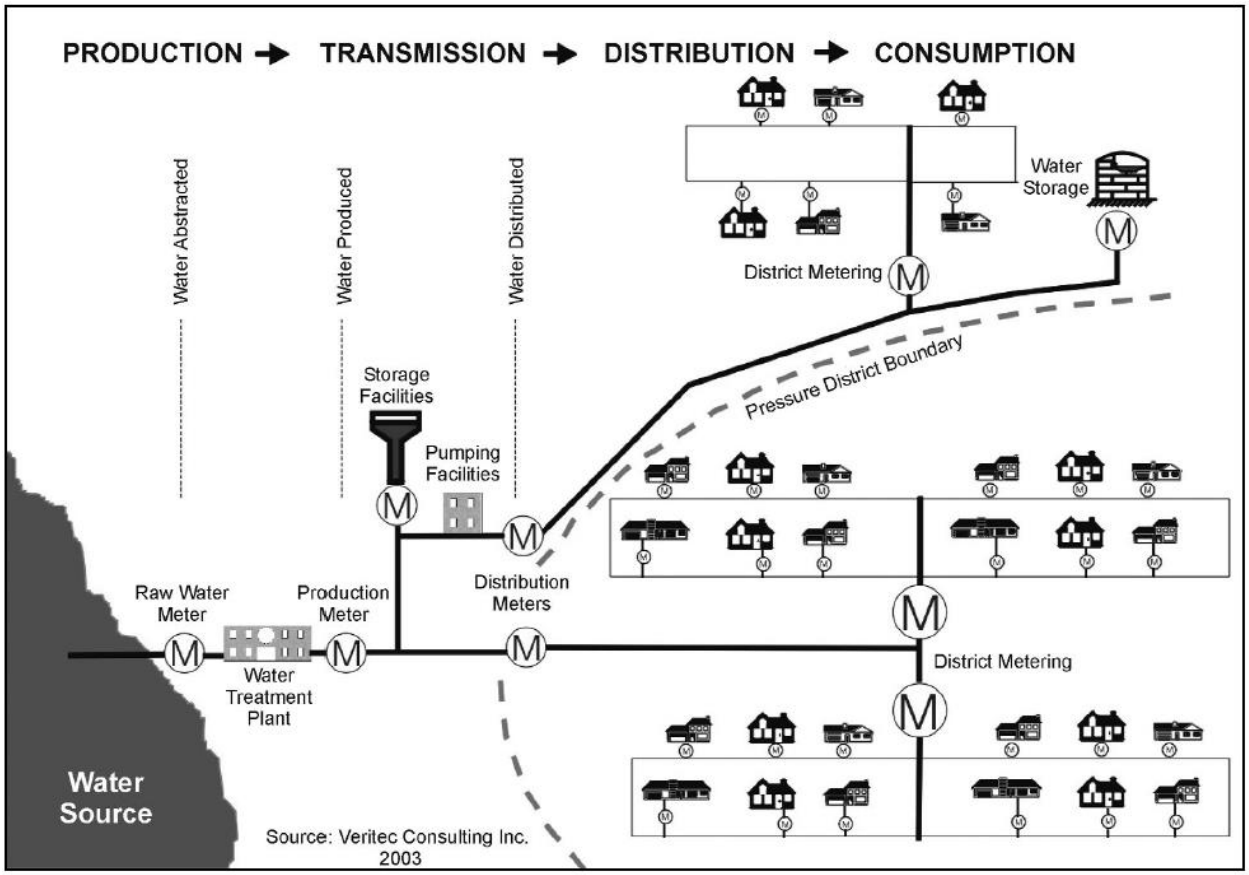
benefits, and system management. User pay systems, like ones used for other commodities such as electricity, natural gas, and fuel should be adopted by the water industry for full cost recovery management, end-user accountability, and wise-water use. According to Environment Canada, flat rate customers in Canada use 457 litres of water per capita per day compared to volume based customers who use only 269 litres per capita per day. As a result, universal metering has proven to reduce overall residential and non-residential water consumption by 15 to 30 percent.

7.4.1 Water Loss Detection

In the absence of metering data, it is unclear if and where water is being lost in the system's distribution network. As a result, the Township is not able to repair/resolve these issues and faces significant revenue losses from potentially unaccounted for water.

Detailed metered information from across the Township would provide a more accurate evaluation of system performance. Based on the survey of best practices, municipalities/utility boards should complete a water audit to account for water usage and loss in the distribution system. Figure 7-1 provides the foundation for establishing a metering plan for a water audit. With a metering plan similar to the figure below, the Township would be able determine if and where water is lost and provide repairs/address issues in those specific areas.

Figure 7-1
Township of Whitewater Region
Metering Plan (Excerpt)



Note: the letter "M" in the above figure provides direction on where to position meters to gain a better understanding of areas of water loss. It is important to meter the treated water leaving the water treatment plant to understand total water production relative to the total amount of billable water. A significant discrepancy would indicate water loss somewhere in the municipality's system.

7.5 Summary of Best Practices

Based on the reviews of the Town of Renfrew, the City of Greater Sudbury, the City of North Bay, the City of Timmins, and the review of the National Guide to Sustainable Municipal Infrastructure, the most common metering practices currently utilized are remote pulse readers, A.M.R. and moving to A.M.I. Significant infrastructure investment is required for A.M.I., however, there is an operating cost savings given the reduction in staff time for meter reading. There is also a significant increase in the amount of data

provided through this technology through constant meter reads. A.M.R. is a very common practice which is less capital intensive than A.M.I., however there are still some additional labour costs required for meter reading. According to the National Guide to Sustainable Municipal Infrastructure, many municipalities have found that the A.M.R. option has been the most cost effective solution for most water utilities.

7.6 Costing of Alternative Metering Technologies

Based on the review of other municipalities, **high-level capital costing estimates** for the remote pulse reading technology and A.M.R. technology is provided in Table 7-4 below. Additionally, **high-level operating costing estimates** are provided in Table 7-5 for remote pulse reading technology and Table 7-6 for A.M.R. technology.

The direct read meters were omitted from the analysis as municipalities have faced numerous challenges when having to manually read water meters inside customer's homes and buildings, therefore it is not a recommended technology. A.M.I. technology was also omitted from the analysis given the diseconomies of scale due to the small customer count in the Township, and the topography in the Township (similar to the Town of Renfrew) making the radio frequency challenging and expensive.

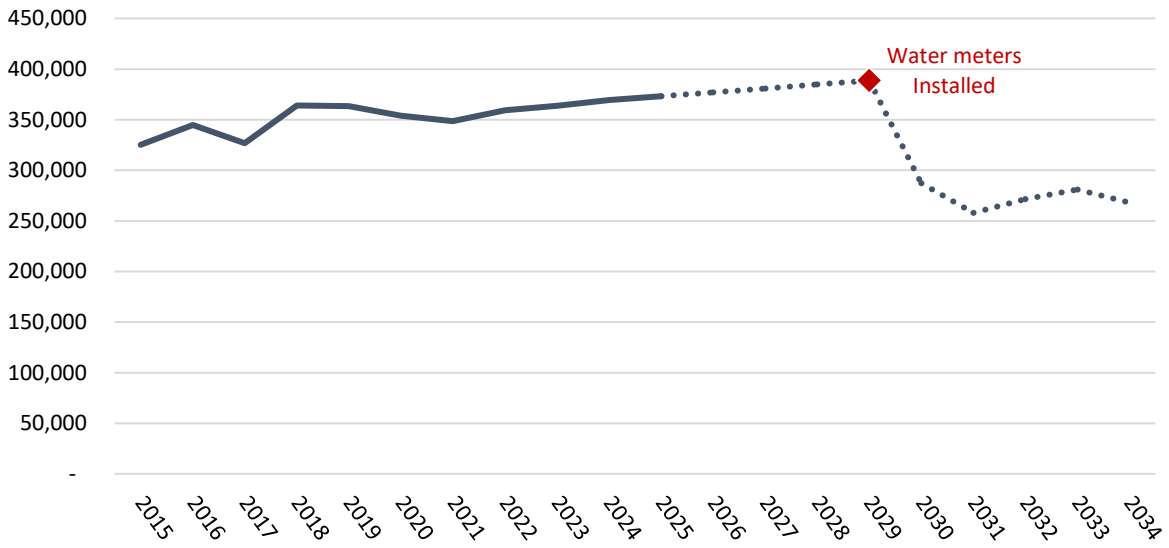
The cost estimates are based on the following assumptions:

- Purchase and installation of approximately 1,200 water meters;
- Meter installation would occur in 2030, with full implementation in 2031;
- Capital costs will be debentured over 15 years at 4.3%;
- Software costs are omitted as the Township's existing billing software has water meter capabilities;
- Additional data analysis/reconciliation will be required (approximately 3 days per billing cycle) given the increased data and change to variable billing;
- Increased customer service will be required (approximately 5 days per billing cycle); and
- The useful lives of water meters are 15 years.

The installation of water meters also provides for potential operating cost savings as well. Based on the findings from the review of municipalities, the City of North Bay found that after the installation of water meters in the City there was a lower demand on the water treatment plant as the water meters provided an appropriate incentive for

users to reduce water consumption. Assuming the same pattern of water usage applied to the Township of Whitewater's treated water from all three (3) treatment plants, a forecast of treated water is shown in Figure 7-2.

Figure 7-2
Township of Whitewater Region
Forecasted Treated Water After Installing Water Meters (m^3)



Based solely on hydro costs, the Township could experience a reduction of approximately $62,000 in operating costs at the Water Treatment Plant in the first year of implementation.

Based on the above assumptions, the costs for each technology are as follows:

Table 7-4
Township of Whitewater Region
Estimated Water Meter Capital Costs (2030$)

Water Meter Infrastructure	Cost Estimate (2030 $)
Remote Pulse Readers	740,000
Automatic Meter Reading	888,000

Table 7-5
Township of Whitewater Region
Estimated Remote Pulse Reader Operating Costs (Inflated $)

Remote Pulse Readers	2031	2032	2033	2034
Annual Capital Cost				
Water Meter Growth Related Debt (Principal)	$36,140	$37,694	$39,315	$41,006
Water Meter Growth Related Debt (Interest)	$31,820	$30,266	$28,645	$26,955
Operating Costs				
Meter Reading Costs	60,600	62,600	64,600	66,800
Meter Company Support Contract	6,000	6,100	6,200	6,300
Data Analysis/Customer Support Costs	19,800	20,200	20,600	21,100
Hydro Cost Savings	(62,000)	(84,100)	(79,000)	(76,300)
Total Net Costs	**92,360**	**72,760**	**80,360**	**85,860**

Table 7-6
Township of Whitewater Region
Estimated Automatic Meter Reading Operating Costs (Inflated $)

Automatic Meter Reading	2031	2032	2033	2034
Annual Capital Cost				
Water Meter Growth Related Debt (Principal)	$43,368	$45,233	$47,178	$49,207
Water Meter Growth Related Debt (Interest)	$38,184	$36,319	$34,374	$32,346
Operating Costs				
Meter Reading Costs	900	900	1,000	1,000
Meter Company Support Contract	6,900	7,000	7,200	7,300
Data Analysis/Customer Support Costs	19,800	20,200	20,600	21,100
Hydro Cost Savings	(62,000)	(84,100)	(79,000)	(76,300)
Total Net Costs	**47,152**	**25,552**	**31,352**	**34,652**

7.7 Summary

Based on the two meter options above (remote pulse readers and A.M.R.), Table 7-7 provides a summary of both quantitative and qualitative considerations including annual operating costs, annual capital costs, administrative burden, and the quality of data provided.

It is recommended that a fulsome analysis be undertaken to determine the true feasibility of implementing a water metering program in the Township. The high-level cost estimates above are based on a number of assumptions and historical costs from other municipal comparators and quotes from water meter suppliers in 2022.

Table 7-7
Township of Whitewater Region
Summary of Water Meter Alternatives

Meter Reading Technology and Billing Type	Average Annual Operating Cost	Annual Capital Cost	Administrative Burden for Meter Reading	Administrative Burden for Data Analysis/ Customer Support	Quality of Data Provided
Remote Pulse Readers	$14,000	$67,000	High	Medium	Medium
A.M.R. – Drive By	-$47,000	$82,000	Medium	Medium	Medium

Note: Operating costs include meter reading, meter company support, data analysis, customer support, and hydro cost savings.

7.8 Implementation Matters

For implementing the meters into the water system, the Township may consider phasing in the volumetric rate for its residents and businesses. For example, assuming the Township begins meter installation in 2030, in the year after the meters are installed (i.e., 2031) there is less than a year's worth of metering data to establish a reasonable volumetric rate. In the second year (i.e., 2032), the Township can use the consumption data from 2031 to establish volume rates. However, since there is only one full year of data available, the Township should aim to recover 80-90% of the revenue required for maintaining the water system through fixed charges (e.g., base charge). As the Township collects more consumption data in the following years, the volumetric rate can be phased-in until the revenues required for the water system can be fully recovered through metered rates. Table 7-8 below summarizes the recommended implementation timeline along with the rate structure for each year.

Table 7-8
Township of Whitewater Region
Summary of Meter Implementation Matters

Year	Portion of Revenue Recovered from:		Rate Structure
	Volumetric Rate	Flat Rate	
Year 1 (i.e., 2030)	0%	100%	Flat Rate Structure
Year 2 (i.e., 2031)	0%	100%	Flat Rate Structure
Year 3 (i.e., 2032)	10-20%	80-90%	Flat Rate and Volumetric Rate
Year 4 (i.e., 2033)	50%	50%	Flat Rate and Volumetric Rate
Year 5 (i.e., 2034)	100%	0%	Base Rate with Volumetric Rate

Chapter 8
Analysis of Water and Wastewater Rates and Policy Matters

8. Analysis of Water and Wastewater Rates and Policy Matters

8.1 Introduction

To summarize the analysis undertaken thus far, Chapter 2 reviewed capital-related issues and responds to the provincial directives to maintain and upgrade infrastructure to required levels. Chapter 4 provided a review of capital financing options to which water and wastewater reserve contributions will be the predominant basis for financing future capital replacement. Chapter 5 established the 10-year operating forecast of expenditures including an annual capital reserve contribution. Chapter 7 provided a detailed review of meter implementation for the Township. This chapter will provide for the calculation of the flat rates over the forecast period. These calculations will be based on the net operating expenditures (the variable costs) provided in Chapter 5, divided by the weighted number of customer units forecasted in Section 1.8.

8.2 Water Rates

Based on the discussion of rate structures provided in section 6.6 and the recommendation to continue with the present structures, the rates are calculated by taking the net recoverable amounts from Table 5-1 (the product of total expenditures less non-rate revenues and deduct the metered revenue amounts discussed in section 6.5) and completes the calculation by dividing them by the number of customer units (on a residential equivalent basis) resulting in the forecasted rates. The flat rates are anticipated to increase at a rate of 5% per year over the forecast period from 2026 to 2034. The forecasted rates are presented in Table 8-1. Detailed calculations of the flat rates are provided in Appendix A. A summary of the recommended flat rates along with the total annual bill for a residential user who are as follows:

Table 8-1
Township of Whitewater Region
Forecasted Annual Residential Water Bill

Description	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Water										
Bi-Monthly Flat Rate	$201.42	$211.49	$222.07	$233.17	$244.83	$257.07	$269.92	$283.42	$297.59	$312.47
Annual Water Bill	**$1,208.52**	**$1,268.95**	**$1,332.39**	**$1,399.01**	**$1,468.96**	**$1,542.41**	**$1,619.53**	**$1,700.51**	**$1,785.53**	**$1,874.81**
% Increase (Water Bill)		**5%**	**5%**	**5%**	**5%**	**5%**	**5%**	**5%**	**5%**	**5%**

8.3 Wastewater Rates

Similar to water, the calculation of the wastewater rates takes the net recoverable amounts from Table 5-2 and completes the calculation by dividing them by the residential equivalent customer units, resulting in the forecasted flat rates. Detailed calculations are provided in Appendix B.

Based on the timing of the capital needs, coupled with the positive wastewater reserve balance, the wastewater flat rates are anticipated to increase by 4% per year from 2026 to 2029, 3% in 2030, and 2% every year thereafter.

The following summarizes the recommended rates for wastewater and provides the average annual bill for a residential customer:

Table 8-2
Township of Whitewater Region
Forecasted Annual Residential Wastewater Bill

Description	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Wastewater										
Bi-Monthly Flat Rate	$326.46	$339.52	$353.10	$367.22	$381.91	$393.37	$401.24	$409.26	$417.45	$425.80
Annual Wastewater Bill	**$1,958.76**	**$2,037.11**	**$2,118.59**	**$2,203.34**	**$2,291.47**	**$2,360.22**	**$2,407.42**	**$2,455.57**	**$2,504.68**	**$2,554.77**
% Increase (Wastewater Bill)		**4%**	**4%**	**4%**	**4%**	**3%**	**2%**	**2%**	**2%**	**2%**

8.4 Forecast of Combined Water and Wastewater Impact for the Average Residential Customer

Based on the foregoing information, the combined impact of the water and wastewater flat rate charge equal to an 6% annual increase on the combined bill from 2026 to 2029, an increase of 5% from 2030 to 2031, and an increase of 3% every year thereafter for residential customer units. Table 8-3 presents the forecast combined annual bill for residential customers.

Table 8-3
Township of Whitewater Region
Forecasted Annual Residential Water and Wastewater Bill

Description	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Water										
Bi-Monthly Flat Rate	$201.42	$211.49	$222.07	$233.17	$244.83	$257.07	$269.92	$283.42	$297.59	$312.47
Annual Water Bill	**$1,208.52**	**$1,268.95**	**$1,332.39**	**$1,399.01**	**$1,468.96**	**$1,542.41**	**$1,619.53**	**$1,700.51**	**$1,785.53**	**$1,874.81**
% Increase (Water Bill)		**5%**	**5%**	**5%**	**5%**	**5%**	**5%**	**5%**	**5%**	**5%**
Wastewater										
Bi-Monthly Flat Rate	$326.46	$339.52	$353.10	$367.22	$381.91	$393.37	$401.24	$409.26	$417.45	$425.80
Annual Wastewater Bill	**$1,958.76**	**$2,037.11**	**$2,118.59**	**$2,203.34**	**$2,291.47**	**$2,360.22**	**$2,407.42**	**$2,455.57**	**$2,504.68**	**$2,554.77**
% Increase (Wastewater Bill)		**4%**	**4%**	**4%**	**4%**	**3%**	**2%**	**2%**	**2%**	**2%**
Total Water and Wastewater Bill	**$3,167.28**	**$3,306.06**	**$3,450.99**	**$3,602.35**	**$3,760.44**	**$3,902.63**	**$4,026.95**	**$4,156.08**	**$4,290.21**	**$4,429.59**
Annual % Increase		**4%**	**4%**	**4%**	**4%**	**4%**	**3%**	**3%**	**3%**	**3%**

8.5 Forecast Volume Rates for Water and Wastewater By Class of User

As noted in Section 6.5, metered customers are charged a volume rate (with a minimum charge) based on the amount of water used. Additionally, classes of users have rates imposed based on their estimated equivalency to a residential unit. Tables 8-4 and 8-5 provide the forecasted water and wastewater flat charges (by class of user) as well as the volume rates.

Table 8-4
Township of Whitewater Region
Forecasted Water Rates by Class of User

Annual Flat Rates	Weighting Factor	2026	2027	2028	2029	2030	2031	2032	2033	2034
Residential	1.00	$ 1,268.95	$ 1,332.39	$ 1,399.01	$ 1,468.96	$ 1,542.41	$ 1,619.53	$ 1,700.51	$ 1,785.53	$ 1,874.81
Multi-Residential (1st Unit)	1.00	$ 1,268.95	$ 1,332.39	$ 1,399.01	$ 1,468.96	$ 1,542.41	$ 1,619.53	$ 1,700.51	$ 1,785.53	$ 1,874.81
Multi-Residential (2nd & subsequent units)	0.80	$ 1,015.16	$ 1,065.91	$ 1,119.21	$ 1,175.17	$ 1,233.93	$ 1,295.63	$ 1,360.41	$ 1,428.43	$ 1,499.85
Small Commercial	1.00	$ 1,268.95	$ 1,332.39	$ 1,399.01	$ 1,468.96	$ 1,542.41	$ 1,619.53	$ 1,700.51	$ 1,785.53	$ 1,874.81
Medium Commercial	1.50	$ 1,903.42	$ 1,998.59	$ 2,098.52	$ 2,203.45	$ 2,313.62	$ 2,429.30	$ 2,550.76	$ 2,678.30	$ 2,812.22
High/Large Commercial - Tier 1	2.00	$ 2,537.89	$ 2,664.79	$ 2,798.03	$ 2,937.93	$ 3,084.82	$ 3,239.06	$ 3,401.02	$ 3,571.07	$ 3,749.62
High/Large Commercial - Tier 2	10.00	$12,689.46	$13,323.93	$13,990.13	$14,689.64	$15,424.12	$16,195.32	$17,005.09	$17,855.34	$18,748.11

Water - Metered Rates		2026	2027	2028	2029	2030	2031	2032	2033	2034
Metered Charge (per cu.m)		2.207	2.317	2.433	2.555	2.683	2.817	2.958	3.106	3.261

Table 8-5
Township of Whitewater Region
Forecasted Wastewater Rates by Class of User

Annual Flat Rates	Weighting Factor	2026	2027	2028	2029	2030	2031	2032	2033	2034
Residential	1.00	$2,037.11	$2,118.59	$2,203.34	$2,291.47	$2,360.22	$2,407.42	$2,455.57	$2,504.68	$2,554.77
Multi-Residential (1st Unit)	1.00	$2,037.11	$2,118.59	$2,203.34	$2,291.47	$2,360.22	$2,407.42	$2,455.57	$2,504.68	$2,554.77
Multi-Residential (2nd & subsequent units)	0.80	$1,629.70	$1,694.89	$1,762.68	$1,833.19	$1,888.19	$1,925.95	$1,964.47	$2,003.76	$2,043.84
Small Commercial	1.00	$2,037.11	$2,118.59	$2,203.34	$2,291.47	$2,360.22	$2,407.42	$2,455.57	$2,504.68	$2,554.77
Medium Commercial	1.50	$3,054.89	$3,177.09	$3,304.17	$3,436.34	$3,539.43	$3,610.22	$3,682.42	$3,756.07	$3,831.19
High/Large Commercial - Tier 1	2.00	$4,074.09	$4,237.06	$4,406.54	$4,582.80	$4,720.28	$4,814.69	$4,910.98	$5,009.20	$5,109.39
High/Large Commercial - Tier 2	10.00	$20,371.10	$21,185.95	$22,033.39	$22,914.72	$23,602.16	$24,074.21	$24,555.69	$25,046.80	$25,547.74

Metered Rates		2026	2027	2028	2029	2030	2031	2032	2033	2034
Metered Charge (per cu.m)		5.263	5.474	5.693	5.921	6.098	6.220	6.345	6.472	6.601

Chapter 9
Recommendations

9. Recommendations

As presented within this report, capital and operating expenditures have been identified and forecast over a 10-year period for water and wastewater services.

Based upon the foregoing, the following recommendations are identified for consideration by the Township's Council:

1. That Council provide for the recovery of all water and wastewater costs through full cost recovery rates.

2. That Council consider the Capital Plan for water and wastewater as provided in Tables 2-1 and 2-2 and the associated Capital Financing Plan as set out in Tables 4-3 and 4-4.

3. That Council consider the flat rates provided in Table 8-4 for water and Table 8-5 for wastewater.

4. That Council consider the volumes rates provided in Table 8-4 for water and Table 8-5 for wastewater.

5. That the Township consider the recommendations for updating the existing customer categorization provided in Section 1.9.2.

6. That the Township examine the difference between cost, revenue and/or consumption with the implementation of water meters to all and/or certain water users.

7. That the Township consider implementing meters for the large commercial categories for data collection to determine the appropriate volumetric meter rate for Township-wide implementation.

8. That the Township consider reviewing the discretionary reductions in development charge rates and/or update the Development Charges Background Study.

Appendices

Appendix A
Detailed Water Rate Calculations

Appendix A: Detailed Water Rate Calculations

Table A-1
Township of Whitewater Region
Capital Budget Forecast (Uninflated $)

Description	Total	Forecast									
		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Expenditures											
Beachburg Water Treatment Plant											
Decommission Well #1 & new drilled well	200,000	-	-	-	-	-	200,000	-	-	-	-
Chemical Treatment: Replace metering pumps	16,000	8,000	-	-	8,000	-	-	-	-	-	-
Chlorine Storage Tank and Chlorine Day Tank	7,500	-	-	7,500	-	-	-	-	-	-	-
Alum Storage Tank and Alum Day Tank	12,000	-	-	12,000	-	-	-	-	-	-	-
Replace Control Values (2)	10,000	-	-	-	-	-	10,000	-	-	-	-
Replace Manual Values (Butterfly, Gate, and Ball)	10,000	-	-	-	-	-	10,000	-	-	-	-
SCADA/PLC Program Replacement	40,000		-	-	-	-	-	40,000	-	-	-
Haley Water Treatment Plant											
Flow Meters (2) Replacement	15,000		-	-	-	-	15,000	-	-	-	-
Cobden Water Treatment Plant	-										
Filtration Compressor Replacement	15,000	-	-	15,000	-	-	-	-	-	-	-
Filtration Flash Mixers Replacement (4)	14,000	-		-	14,000	-	-	-	-	-	-
Chemical Process Pumps (4) and Diaphragm Pumps (6) Replacement	30,000	12,000	-	-	-	12,000	-	-	-	6,000	-
Level Monitoring	10,500	-	-	-	10,500	-	-	-	-	-	-
Water Tower Storage Tank: Recoating	1,800,000	-	-	1,800,000	-	-	-	-	-	-	-
Cobden WTP Upgrade Project	2,000,000				2,000,000						
Miscellaneous											
Crawford Street (Water)	600,000	-	600,000	-	-	-	-	-	-	-	-
Hume Street (Water)	300,000	-	-	-	300,000	-	-	-	-	-	-
Stewart Street (Water)	120,000	-	-	-	120,000	-	-	-	-	-	-
Meadow Street (Water)	410,000	-	-	-	-	410,000	-	-	-	-	-
Beachburg Road (Water)	400,000	400,000									
Water Meters - Comm	125,000	-	125,000	-	-	-	-	-	-	-	-
Water Meters - Res	450,000								450,000		
Studies:											
Water Master Servicing Plan	150,000	-	150,000	-	-	-	-	-	-	-	-
Financial Plan and Rate Study	35,000	-	-	-	-	17,500	-	-	-	-	17,500
Total Capital Expenditures	**6,770,000**	**420,000**	**875,000**	**1,834,500**	**2,452,500**	**439,500**	**235,000**	**40,000**	**450,000**	**6,000**	**17,500**

Table A-2
Township of Whitewater Region
Capital Budget Forecast (Inflated $)

Description	Total	Forecast									
		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Expenditures:											
Beachburg Water Treatment Plant											
Decommission Well #1 & new drilled well	225,000	-	-	-	-	-	225,000	-	-	-	-
Chemical Treatment: Replace metering pumps	17,000	8,000	-	-	9,000	-	-	-	-	-	-
Chlorine Storage Tank and Chlorine Day Tank	8,000	-	-	8,000	-	-	-	-	-	-	-
Alum Storage Tank and Alum Day Tank	13,000	-	-	13,000	-	-	-	-	-	-	-
Replace Control Values (2)	11,000	-	-	-	-	-	11,000	-	-	-	-
Replace Manual Values (Butterfly, Gate, and Ball)	11,000	-	-	-	-	-	11,000	-	-	-	-
SCADA/PLC Program Replacement	46,000	-	-	-	-	-	-	46,000	-	-	-
Haley Water Treatment Plant	-	-	-	-	-	-	-	-	-	-	-
Flow Meters (2) Replacement	17,000	-	-	-	-	-	17,000	-	-	-	-
Cobden Water Treatment Plant	-	-	-	-	-	-	-	-	-	-	-
Filtration Compressor Replacement	16,000	-	-	16,000	-	-	-	-	-	-	-
Filtration Flash Mixers Replacement (4)	15,000	-	-	-	15,000	-	-	-	-	-	-
Chemical Process Pumps (4) and Diaphragm Pumps (6) Replacement	32,000	12,000	-	-	-	13,000	-	-	-	7,000	-
Level Monitoring	11,000	-	-	-	11,000	-	-	-	-	-	-
Water Tower Storage Tank: Recoating	1,910,000	-	-	1,910,000	-	-	-	-	-	-	-
Cobden WTP Upgrade Project	2,165,000	-	-	-	2,165,000	-	-	-	-	-	-
Miscellaneous	-	-	-	-	-	-	-	-	-	-	-
Crawford Street (Water)	624,000	-	624,000	-	-	-	-	-	-	-	-
Hume Street (Water)	325,000	-	-	-	325,000	-	-	-	-	-	-
Stewart Street (Water)	130,000	-	-	-	130,000	-	-	-	-	-	-
Meadow Street (Water)	453,000	-	-	-	-	453,000	-	-	-	-	-
Beachburg Road (Water)	408,000	408,000	-	-	-	-	-	-	-	-	-
Water Meters - Comm	130,000	-	130,000	-	-	-	-	-	-	-	-
Water Meters - Res	527,000	-	-	-	-	-	-	-	527,000	-	-
Studies:	-	-	-	-	-	-	-	-	-	-	-
Water Master Servicing Plan	156,000	-	156,000	-	-	-	-	-	-	-	-
Financial Plan and Rate Study	40,000	-	-	-	-	19,000	-	-	-	-	21,000
Total Capital Expenditures	**7,290,000**	**428,000**	**910,000**	**1,947,000**	**2,655,000**	**485,000**	**264,000**	**46,000**	**527,000**	**7,000**	**21,000**

Table A-2 (Cont'd)
Township of Whitewater Region
Capital Budget Forecast (Inflated $)

Description	Total	Forecast									
		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Financing											
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-
Development Charges Reserve Fund	156,000	-	156,000	-	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	4,936,000	-	408,000	1,910,000	2,165,000	453,000	-	-	-	-	-
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-
Water Reserve	2,198,000	428,000	346,000	37,000	490,000	32,000	264,000	46,000	527,000	7,000	21,000
Total Capital Financing	**7,290,000**	**428,000**	**910,000**	**1,947,000**	**2,655,000**	**485,000**	**264,000**	**46,000**	**527,000**	**7,000**	**21,000**

Table A-3
Township of Whitewater Region
Schedule of Non-Growth-Related Debenture Repayments

Debenture Year	Principal (Inflated)	Forecast									
		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2025	-		-	-	-	-	-	-	-	-	-
2026	408,000			24,462	24,462	24,462	24,462	24,462	24,462	24,462	24,462
2027	1,910,000				114,514	114,514	114,514	114,514	114,514	114,514	114,514
2028	2,165,000					129,802	129,802	129,802	129,802	129,802	129,802
2029	453,000						27,160	27,160	27,160	27,160	27,160
2030	-							-	-	-	-
2031	-								-	-	-
2032	-									-	-
2033	-										-
2034	-										
Total Annual Debt Charges	**4,936,000**	-	-	24,462	138,975	268,778	295,937	295,937	295,937	295,937	295,937

Table A-4
Township of Whitewater Region
Schedule of Growth-Related Debenture Repayments

Debenture Year	Principal (Inflated)	Forecast									
		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2025	-		-	-	-	-	-	-	-	-	-
2026	-			-	-	-	-	-	-	-	-
2027	-				-	-	-	-	-	-	-
2028	-					-	-	-	-	-	-
2029	-						-	-	-	-	-
2030	-							-	-	-	-
2031	-								-	-	-
2032	-									-	-
2033	-										-
2034	-										
Total Annual Debt Charges	**-**	-	-	-	-	-	-	-	-	-	-

Table A-5
Township of Whitewater Region
Water Capital Reserves Continuity (Inflated $)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Opening Balance	235,724	470,768	424,731	540,987	1,009,647	972,582	1,337,435	1,557,397	2,064,668	2,199,332	2,949,734
Transfer from Operating	225,814	373,635	451,648	485,863	433,864	370,629	453,425	512,788	618,539	699,565	865,862
Transfer to Capital	-	428,000	346,000	37,000	490,000	32,000	264,000	46,000	527,000	7,000	21,000
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	**461,538**	**416,403**	**530,379**	**989,850**	**953,511**	**1,311,211**	**1,526,860**	**2,024,184**	**2,156,207**	**2,891,896**	**3,794,596**
Interest	9,231	8,328	10,608	19,797	19,070	26,224	30,537	40,484	43,124	57,838	75,892

Table A-6
Township of Whitewater Region
Water Development Charges Reserve Continuity (Inflated $)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Opening Balance	15,000	24,541	34,458	(114,360)	(106,842)	(98,978)	(90,755)	(82,545)	(73,969)	(65,017)	(55,679)
Development Charge Proceeds	9,060	9,241	9,424	9,614	9,805	10,003	9,828	10,027	10,227	10,430	10,639
Transfer to Capital	-	-	156,000	-	-	-	-	-	-	-	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	**24,060**	**33,782**	**(112,118)**	**(104,747)**	**(97,037)**	**(88,975)**	**(80,927)**	**(72,519)**	**(63,742)**	**(54,587)**	**(45,040)**
Interest	481	676	(2,242)	(2,095)	(1,941)	(1,780)	(1,619)	(1,450)	(1,275)	(1,092)	(901)
Required from Development Charges	-	-	156,000	-	-	-	-	-	-	-	-

Table A-7
Township of Whitewater Region
Operating Budget Forecast
(Inflated $)

Description	Forecast									
	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Expenditures										
Operating Costs										
Water Meter Operating Costs							(23,271)	(37,883)	(33,959)	(31,727)
Water Fund Expenditures - Administration										
Water Insurance	32,150	32,800	33,500	34,200	34,900	35,600	36,300	37,000	37,700	38,500
WATER - Services & Rents	-	-	-	-	-	-	-	-	-	-
WATER - Contracts	491,100	500,900	510,900	521,100	531,500	542,100	552,900	564,000	575,300	586,800
WATER - Contract Management	86,700	88,400	90,200	92,000	93,800	95,700	97,600	99,600	101,600	103,600
WATER - Call-ins	12,000	12,200	12,400	12,600	12,900	13,200	13,500	13,800	14,100	14,400
WATER - PIL	11,150	11,400	11,600	11,800	12,000	12,200	12,400	12,600	12,900	13,200
Water Treatment Plants										
WATER PLANTS - Salary	18,950	19,300	19,700	20,100	20,500	20,900	21,300	21,700	22,100	22,500
WATER PLANTS - Benefits	3,850	3,900	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700
WATER PLANTS - Payroll Deductions	1,200	1,220	1,240	1,260	1,290	1,320	1,350	1,380	1,410	1,440
WATER PLANTS - WSIB	625	640	650	660	670	680	690	700	710	720
WATER PLANTS - Hydro	50,400	52,900	55,500	58,300	61,200	64,300	67,500	70,900	74,400	78,100
WATER PLANTS - Gas/Heating	24,000	25,200	26,500	27,800	29,200	30,700	32,200	33,800	35,500	37,300
WATER PLANTS - Equipment Repairs	57,600	58,800	60,000	61,200	62,400	63,600	64,900	66,200	67,500	68,900
WATER PLANTS - Building Repairs & Maintenance	43,500	44,400	45,300	46,200	47,100	48,000	49,000	50,000	51,000	52,000
WATER PLANTS - Miscellaneous	13,000	13,300	13,600	13,900	14,200	14,500	14,800	15,100	15,400	15,700
WATER PLANTS - Capital Expenditure	15,000	15,300	15,600	15,900	16,200	16,500	16,800	17,100	17,400	17,700
Water Distribution										
WATER DIST - Salary	18,950	19,300	19,700	20,100	20,500	20,900	21,300	21,700	22,100	22,500
WATER DIST - Benefits	3,850	3,900	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700
WATER DIST - Payroll Deductions	1,200	1,220	1,240	1,260	1,290	1,320	1,350	1,380	1,410	1,440
WATER DIST - WSIB	625	640	650	660	670	680	690	700	710	720
WATER DIST - Materials/Supplies	10,000	10,500	11,000	11,600	12,200	12,800	13,400	14,100	14,800	15,500
WATER DIST - Watermain Line Repa	7,000	7,100	7,200	7,300	7,400	7,500	7,700	7,900	8,100	8,300
WATER DIST - Paving for Waterbrea	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800
WATER DIST - Miscellaneous	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
WATER DIST - Capital Exp	13,000	13,300	13,600	13,900	14,200	14,500	14,800	15,100	15,400	15,700
Sub Total Operating	**927,850**	**948,820**	**970,480**	**992,640**	**1,015,320**	**1,038,600**	**1,039,209**	**1,049,277**	**1,078,381**	**1,106,493**

Table A-7 (Cont'd)
Township of Whitewater Region
Operating Budget Forecast
(Inflated $)

Description	Forecast									
	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital-Related										
Existing Debt (Principal) - Growth Related	-	-	-	-	-	-	-	-	-	-
Existing Debt (Interest) - Growth Related	-	-	-	-	-	-	-	-	-	-
New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Existing Debt (Principal) - Non-Growth Related	121,675	127,109	132,807	138,765	144,993	117,997	158,314	154,004	161,033	89,164
Existing Debt (Interest) - Non-Growth Related	85,875	80,413	74,715	68,757	62,528	50,355	49,208	42,190	35,161	28,690
New Non-Growth Related Debt (Principal)	-	-	6,918	39,599	78,009	89,044	92,873	96,866	101,032	105,376
New Non-Growth Related Debt (Interest)	-	-	17,544	99,377	190,769	206,893	203,065	199,071	194,906	190,561
Transfer to Capital	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	373,635	451,648	485,863	433,864	370,629	453,425	512,788	618,539	699,565	865,862
Sub Total Capital Related	**581,185**	**659,170**	**717,846**	**780,362**	**846,929**	**917,714**	**1,016,247**	**1,110,671**	**1,191,696**	**1,279,653**
Total Expenditures	**1,509,035**	**1,607,990**	**1,688,326**	**1,773,002**	**1,862,249**	**1,956,314**	**2,055,456**	**2,159,948**	**2,270,077**	**2,386,146**
Revenues										
WATER - Bulk Water Charges	-	-	-	-	-	-	-	-	-	-
OCIF Grant	100,502	123,238	123,238	123,238	123,238	123,238	123,238	123,238	123,238	123,238
Metered Revenue	42,150	44,257	46,470	48,793	51,233	53,795	56,485	59,309	62,274	65,388
Fire Department Usage	10,000	10,200	10,404	10,612	10,824	11,041	11,262	11,487	11,717	11,951
Water Connect/Disconnect Fees	2,000	2,040	2,081	2,122	2,165	2,208	2,252	2,297	2,343	2,390
Penalty on Water/Sewer	6,400	6,528	6,659	6,792	6,928	7,066	7,207	7,352	7,499	7,649
Contributions from Development Charges Reserve	-	-	-	-	-	-	-	-	-	-
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**161,052**	**186,263**	**188,851**	**191,557**	**194,388**	**197,348**	**200,444**	**203,682**	**207,070**	**210,615**
Water Billing Recovery - Total	**1,347,983**	**1,421,727**	**1,499,475**	**1,581,444**	**1,667,861**	**1,758,966**	**1,855,012**	**1,956,266**	**2,063,007**	**2,175,531**

Table A-8
Township of Whitewater Region
Water Rate Forecast
(Inflated $)

Description		2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Water Billing Recovery		1,421,727	1,499,475	1,581,444	1,667,861	1,758,966	1,855,012	1,956,266	2,063,007	2,175,531
Total Non-Metered Customers (Weighted)		1,120	1,125	1,130	1,135	1,140	1,145	1,150	1,155	1,160
Flat Rate (Annual)		**$1,268.95**	**$1,332.39**	**$1,399.01**	**$1,468.96**	**$1,542.41**	**$1,619.53**	**$1,700.51**	**$1,785.53**	**$1,874.81**
Annual Percentage Change		**8%**	**5%**	**5%**	**5%**	**5%**	**5%**	**5%**	**5%**	**5%**
Flat Rate Share of Flows		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Annual Flat Rates	Weighting Factor	2026	2027	2028	2029	2030	2031	2032	2033	2034
Residential	1.00	$ 1,268.95	$ 1,332.39	$ 1,399.01	$ 1,468.96	$ 1,542.41	$ 1,619.53	$ 1,700.51	$ 1,785.53	$ 1,874.81
Multi-Residential (1st Unit)	1.00	$ 1,268.95	$ 1,332.39	$ 1,399.01	$ 1,468.96	$ 1,542.41	$ 1,619.53	$ 1,700.51	$ 1,785.53	$ 1,874.81
Multi-Residential (2nd & subsequent units)	0.80	$ 1,015.16	$ 1,065.91	$ 1,119.21	$ 1,175.17	$ 1,233.93	$ 1,295.63	$ 1,360.41	$ 1,428.43	$ 1,499.85
Small Commercial	1.00	$ 1,268.95	$ 1,332.39	$ 1,399.01	$ 1,468.96	$ 1,542.41	$ 1,619.53	$ 1,700.51	$ 1,785.53	$ 1,874.81
Medium Commercial	1.50	$ 1,903.42	$ 1,998.59	$ 2,098.52	$ 2,203.45	$ 2,313.62	$ 2,429.30	$ 2,550.76	$ 2,678.30	$ 2,812.22
High/Large Commercial - Tier 1	2.00	$ 2,537.89	$ 2,664.79	$ 2,798.03	$ 2,937.93	$ 3,084.82	$ 3,239.06	$ 3,401.02	$ 3,571.07	$ 3,749.62
High/Large Commercial - Tier 2	10.00	$12,689.46	$13,323.93	$13,990.13	$14,689.64	$15,424.12	$16,195.32	$17,005.09	$17,855.34	$18,748.11

Water - Metered Rates		2026	2027	2028	2029	2030	2031	2032	2033	2034
Metered Charge (per cu.m)		2.207	2.317	2.433	2.555	2.683	2.817	2.958	3.106	3.261

Appendix B
Detailed Wastewater Rate Calculations

Appendix B: Detailed Wastewater Rate Calculations

Table B-1
Township of Whitewater Region
Capital Budget Forecast (Uninflated $)

Description	Total	Forecast									
		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Expenditures											
Cobden Wastewater Treatment Plant											
Bar Screen Replacement/Upgrade (2)	250,000	-	-	250,000	-	-	-	-	-	-	-
Inlet Concrete Channel Repair	10,000	10,000	-	-	-	-	-	-	-	-	-
Flow Equalization Tank Inspection and Replacement	42,000	-	-	-	-	-	-	22,000	20,000	-	-
Rotary Drum Screen Rehabilitation	10,000	-	-	10,000	-	-	-	-	-	-	-
Compacting Screw Conveyor Replacement (2)	50,000	-	-	-	-	-	-	50,000	-	-	-
Fine Bubble Aeration System Replacement	80,000	-	-	-	-	-	-	80,000	-	-	-
Membrane Filter Replacements	850,000	-	-	850,000	-	-	-	-	-	-	-
Chain falls, hoists, cranes, and other lifting devices	30,000	30,000	-	-	-	-	-	-	-	-	-
Permeate Rotary Lobe Pump Replacements	35,000	35,000	-	-	-	-	-	-	-	-	-
Chemical Pump Replacements	15,000	-	-	-	-	-	-	15,000	-	-	-
SCADA Overhaul	20,000	-	-	-	20,000	-	-	-	-	-	-
Old Building Upgrades	150,000		150,000								
Pump VFDs Replacements (19)	75,000	-	-	-	-	-	-	-	25,000	25,000	25,000
Simpson Street (Sanitary)	215,000	-	-	-	215,000	-	-	-	-	-	-
Meadow Street (Sanitary)	220,000	-	-	-	-	220,000	-	-	-	-	-
Water Meters - Comm	59,783	-	59,783	-	-	-	-	-	-	-	-
Water Meters - Res	215,217								215,217		
Studies:											
Wastewater Master Servicing Plan	100,000	-	100,000	-	-	-	-	-	-	-	-
Water & Wastewater Rate Study	35,000	-	-	-	-	17,500	-	-	-	-	17,500
Total Capital Expenditures	**2,462,000**	**75,000**	**309,783**	**1,110,000**	**235,000**	**237,500**	**-**	**167,000**	**260,217**	**25,000**	**42,500**

Table B-2
Township of Whitewater Region
Capital Budget Forecast (Inflated $)

Description	Total	Forecast									
		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital Expenditures											
Cobden Wastewater Treatment Plant											
Bar Screen Replacement/Upgrade (2)	265,000	-	-	265,000	-	-	-	-	-	-	-
Inlet Concrete Channel Repair	10,000	10,000	-	-	-	-	-	-	-	-	-
Flow Equalization Tank Inspection and Replacement	48,000	-	-	-	-	-	-	25,000	23,000	-	-
Rotary Drum Screen Rehabilitation	11,000	-	-	11,000	-	-	-	-	-	-	-
Compacting Screw Conveyor Replacement (2)	57,000	-	-	-	-	-	-	57,000	-	-	-
Fine Bubble Aeration System Replacement	92,000	-	-	-	-	-	-	92,000	-	-	-
Membrane Filter Replacements	902,000	-	-	902,000	-	-	-	-	-	-	-
Chain falls, hoists, cranes, and other lifting devices	31,000	31,000	-	-	-	-	-	-	-	-	-
Permeate Rotary Lobe Pump Replacements	36,000	36,000	-	-	-	-	-	-	-	-	-
Chemical Pump Replacements	17,000	-	-	-	-	-	-	17,000	-	-	-
SCADA Overhaul	22,000	-	-	-	22,000	-	-	-	-	-	-
Old Building Upgrades	156,000	-	156,000	-	-	-	-	-	-	-	-
Pump VFDs Replacements (19)	89,000	-	-	-	-	-	-	-	29,000	30,000	30,000
Simpson Street (Sanitary)	233,000	-	-	-	233,000	-	-	-	-	-	-
Meadow Street (Sanitary)	243,000	-	-	-	-	243,000	-	-	-	-	-
Water Meters - Comm	62,000	-	62,000	-	-	-	-	-	-	-	-
Water Meters - Res	252,000	-	-	-	-	-	-	-	252,000	-	-
Studies:											
Wastewater Master Servicing Plan	104,000	-	104,000	-	-	-	-	-	-	-	-
Water & Wastewater Rate Study	40,000	-	-	-	-	19,000	-	-	-	-	21,000
Total Capital Expenditures	**2,670,000**	**77,000**	**322,000**	**1,178,000**	**255,000**	**262,000**	**-**	**191,000**	**304,000**	**30,000**	**51,000**
Capital Financing											
Provincial/Federal Grants	-	-	-	-	-	-	-	-	-	-	-
Development Charges Reserve Fund	104,000	-	104,000	-	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	1,002,000	-	-	1,002,000	-	-	-	-	-	-	-
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	77,000	77,000	-	-	-	-	-	-	-	-	-
Sewage System Debenture	-	-	-	-	-	-	-	-	-	-	-
Wastewater Reserve	1,487,000	-	218,000	176,000	255,000	262,000	-	191,000	304,000	30,000	51,000
Total Capital Financing	**2,670,000**	**77,000**	**322,000**	**1,178,000**	**255,000**	**262,000**	**-**	**191,000**	**304,000**	**30,000**	**51,000**

Table B-3
Township of Whitewater Region
Schedule of Non-Growth-Related Debenture Repayments

Debenture Year	Principal (Inflated)	Forecast									
		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2025	-		-	-	-	-	-	-	-	-	-
2026	-			-	-	-	-	-	-	-	-
2027	1,002,000				125,389	125,389	125,389	125,389	125,389	125,389	125,389
2028	-					-	-	-	-	-	-
2029	-						-	-	-	-	-
2030	-							-	-	-	-
2031	-								-	-	-
2032	-									-	-
2033	-										-
2034	-										
Total Annual Debt Charges	**1,002,000**	-	-	-	125,389	125,389	125,389	125,389	125,389	125,389	125,389

Table B-4
Township of Whitewater Region
Schedule of Growth-Related Debenture Repayments

Debenture Year	Principal (Inflated)	Forecast									
		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
2025	-		-	-	-	-	-	-	-	-	-
2026	-			-	-	-	-	-	-	-	-
2027	-				-	-	-	-	-	-	-
2028	-					-	-	-	-	-	-
2029	-						-	-	-	-	-
2030	-							-	-	-	-
2031	-								-	-	-
2032	-									-	-
2033	-										-
2034	-										
Total Annual Debt Charges	**-**	-	-	-	-	-	-	-	-	-	-

Table B-5
Township of Whitewater Region
Wastewater Sewer Upgrading Reserve Continuity (Inflated $)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Opening Balance	-	31,081	224,623	344,656	543,234	572,479	632,118	985,151	1,173,045	1,276,526	1,671,252
Transfer from Operating	30,471	189,138	331,275	363,926	273,020	309,244	333,717	355,893	382,452	391,957	402,368
Transfer to Capital	-	-	218,000	176,000	255,000	262,000	-	191,000	304,000	30,000	51,000
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	**30,471**	**220,218**	**337,898**	**532,582**	**561,254**	**619,723**	**965,835**	**1,150,044**	**1,251,496**	**1,638,483**	**2,022,621**
Interest	609	4,404	6,758	10,652	11,225	12,394	19,317	23,001	25,030	32,770	40,452

Table B-6
Township of Whitewater Region
Development Charges Reserve Continuity (Inflated $)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Opening Balance	12,000	22,460	33,334	(61,444)	(51,827)	(41,799)	(31,351)	(21,015)	(10,252)	949	12,601
Development Charge Proceeds	10,020	10,220	10,426	10,634	10,847	11,063	10,748	10,964	11,182	11,405	11,634
Transfer to Capital	-	-	104,000	-	-	-	-	-	-	-	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	**22,020**	**32,681**	**(60,240)**	**(50,810)**	**(40,980)**	**(30,737)**	**(20,603)**	**(10,051)**	**930**	**12,354**	**24,235**
Interest	440	654	(1,205)	(1,016)	(820)	(615)	(412)	(201)	19	247	485
Required from Development Charges	-	-	104,000	-	-	-	-	-	-	-	-

Table B-7
Township of Whitewater Region
Sewage System Debenture Reserve (Inflated $)

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Opening Balance	26,504	27,034	27,575	28,126	28,689	29,263	29,848	30,445	31,054	31,675	32,309
Transfer from Operating	-	0	0	0	0	0	0	0	0	0	0
Transfer to Capital	-	-	-	-	-	-	-	-	-	-	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	**26,504**	**27,034**	**27,575**	**28,126**	**28,689**	**29,263**	**29,848**	**30,445**	**31,054**	**31,675**	**32,309**
Interest	530	541	551	563	574	585	597	609	621	634	646

Table B-8
Township of Whitewater Region
Operating Budget Forecast (Inflated $)

Description	Forecast									
	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Expenditures										
Operating Costs										
Water Meter Operating Costs							(11,129)	(18,117)	(16,241)	(15,173)
Sewer Collection										
SEWER DIST - Salary	7,375	7,500	7,700	7,900	8,100	8,300	8,500	8,700	8,900	9,100
SEWER DIST - Benefits	1,500	1,530	1,560	1,590	1,620	1,650	1,680	1,710	1,740	1,770
SEWER DIST - Payroll Deductions	450	460	470	480	490	500	510	520	530	540
SEWER DIST - WSIB	250	260	270	280	290	300	310	320	330	340
SEWER DIST - Materials/Supplies	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	1,900
SEWER DIST - Sanitary Main/Line Re	12,500	12,800	13,100	13,400	13,700	14,000	14,300	14,600	14,900	15,200
SEWER DIST - Sewer Line Maintenan	22,500	23,000	23,500	24,000	24,500	25,000	25,500	26,000	26,500	27,000
SEWER DIST - Miscellaneous	500	510	520	530	540	550	560	570	580	590
Sewer Treatment Plant										
SEWER PLANT - Salary	7,375	7,500	7,700	7,900	8,100	8,300	8,500	8,700	8,900	9,100
SEWER PLANT - Benefit	1,500	1,530	1,560	1,590	1,620	1,650	1,680	1,710	1,740	1,770
SEWER PLANT - Payroll Deductions	450	460	470	480	490	500	510	520	530	540
SEWER PLANT - WSIB	250	260	270	280	290	300	310	320	330	340
SEWER PLANT - Insurance	11,275	11,500	11,700	11,900	12,100	12,300	12,500	12,800	13,100	13,400
SEWER PLANT - Equipment Repairs & Maintenance	25,000	25,500	26,000	26,500	27,000	27,500	28,100	28,700	29,300	29,900
SEWER PLANT - Hydro	127,100	133,500	140,200	147,200	154,600	162,300	170,400	178,900	187,800	197,200
SEWER PLANT - Gas/Heating	12,000	12,600	13,200	13,900	14,600	15,300	16,100	16,900	17,700	18,600
SEWER PLANT - Building Repairs & Maintenance	14,500	14,800	15,100	15,400	15,700	16,000	16,300	16,600	16,900	17,200
SEWER PLANT - Contract Operating	393,750	401,600	409,600	417,800	426,200	434,700	443,400	452,300	461,300	470,500
SEWER PLANT - Contract Management	69,500	70,900	72,300	73,700	75,200	76,700	78,200	79,800	81,400	83,000
SEWER PLANT - Call-ins	12,000	12,200	12,400	12,600	12,900	13,200	13,500	13,800	14,100	14,400
SEWER PLANT - Miscellaneous	10,000	10,200	10,400	10,600	10,800	11,000	11,200	11,400	11,600	11,800
SEWER PLANT - PIL Sewer Plant	44,500	45,400	46,300	47,200	48,100	49,100	50,100	51,100	52,100	53,100
SEWER PLANT - Capital	77,000	78,500	80,100	81,700	83,300	85,000	86,700	88,400	90,200	92,000
Sub Total Operating	**852,275**	**873,610**	**895,620**	**918,230**	**941,640**	**965,650**	**979,331**	**997,953**	**1,026,039**	**1,054,117**

Table B-8 (Cont'd)
Township of Whitewater Region
Operating Budget Forecast (Inflated $)

Description	Forecast									
	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Capital-Related										
Existing Debt (Principal) - Growth Related	-	-	-	-	-	-	-	-	-	-
Existing Debt (Interest) - Growth Related	-	-	-	-	-	-	-	-	-	-
New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Existing Debt (Principal) - Non-Growth Related	147,900	152,356	156,988	161,760	166,678	171,746	176,969	173,807	179,043	184,437
Existing Debt (Interest) - Non-Growth Related	170,100	165,590	160,959	156,186	151,268	146,200	140,978	135,672	130,436	125,042
New Non-Growth Related Debt (Principal)	-	-	-	89,534	93,384	97,399	101,587	105,956	110,512	115,264
New Non-Growth Related Debt (Interest)	-	-	-	35,856	32,006	27,990	23,802	19,434	14,878	10,126
Transfer to Capital	77,000	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	189,138	331,275	363,926	273,020	309,244	333,717	355,893	382,452	391,957	402,368
Sub Total Capital Related	**584,138**	**649,222**	**681,873**	**716,356**	**752,580**	**777,053**	**799,228**	**817,320**	**826,825**	**837,237**
Total Expenditures	**1,436,413**	**1,522,832**	**1,577,493**	**1,634,586**	**1,694,220**	**1,742,703**	**1,778,559**	**1,815,273**	**1,852,864**	**1,891,354**
Revenues										
OCIF Grant	278,318	312,406	312,406	312,406	312,406	312,406	312,406	312,406	312,406	312,406
Penalty on Water/Sewer	7,600	7,800	8,000	8,200	8,400	8,600	8,800	9,000	9,200	9,400
Metered Revenue	104,517	108,698	113,046	117,567	122,270	125,938	128,457	131,026	133,647	136,320
Contributions from Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**390,435**	**428,903**	**433,451**	**438,173**	**443,076**	**446,944**	**449,663**	**452,432**	**455,252**	**458,125**
Wastewater Billing Recovery - Total	**1,045,978**	**1,093,928**	**1,144,041**	**1,196,413**	**1,251,144**	**1,295,759**	**1,328,896**	**1,362,841**	**1,397,612**	**1,433,228**

Table B-9
Township of Whitewater Region
Wastewater Rate Forecast
(Inflated $)

Description		2026	2027	2028	2029	2030	2031	2032	2033	2034
Total Wastewater Billing Recovery		1,093,928	1,144,041	1,196,413	1,251,144	1,295,759	1,328,896	1,362,841	1,397,612	1,433,228
Total Non-Metered Customers (Weighted)		537	540	543	546	549	552	555	558	561
Flat Rate (Annual)		**$2,037.11**	**$2,118.59**	**$2,203.34**	**$2,291.47**	**$2,360.22**	**$2,407.42**	**$2,455.57**	**$2,504.68**	**$2,554.77**
Annual Percentage Change		**4%**	**4%**	**4%**	**4%**	**3%**	**2%**	**2%**	**2%**	**2%**

Annual Flat Rates	Weighting Factor	2026	2027	2028	2029	2030	2031	2032	2033	2034
Residential	1.00	$2,037.11	$2,118.59	$2,203.34	$2,291.47	$2,360.22	$2,407.42	$2,455.57	$2,504.68	$2,554.77
Multi-Residential (1st Unit)	1.00	$2,037.11	$2,118.59	$2,203.34	$2,291.47	$2,360.22	$2,407.42	$2,455.57	$2,504.68	$2,554.77
Multi-Residential (2nd & subsequent units)	0.80	$1,629.70	$1,694.89	$1,762.68	$1,833.19	$1,888.19	$1,925.95	$1,964.47	$2,003.76	$2,043.84
Small Commercial	1.00	$2,037.11	$2,118.59	$2,203.34	$2,291.47	$2,360.22	$2,407.42	$2,455.57	$2,504.68	$2,554.77
Medium Commercial	1.50	$3,054.89	$3,177.09	$3,304.17	$3,436.34	$3,539.43	$3,610.22	$3,682.42	$3,756.07	$3,831.19
High/Large Commercial - Tier 1	2.00	$4,074.09	$4,237.06	$4,406.54	$4,582.80	$4,720.28	$4,814.69	$4,910.98	$5,009.20	$5,109.39
High/Large Commercial - Tier 2	10.00	$20,371.10	$21,185.95	$22,033.39	$22,914.72	$23,602.16	$24,074.21	$24,555.69	$25,046.80	$25,547.74

Metered Rates		2026	2027	2028	2029	2030	2031	2032	2033	2034
Metered Charge (per cu.m)		5.263	5.474	5.693	5.921	6.098	6.220	6.345	6.472	6.601

Appendix C
Class of Customer Definitions

Appendix C1: Current Class of Customer Definitions

RESIDENTIAL UNIT	• Self contained residential units including apartments, churches
SMALL COMMERCIAL UNIT	• Commercial operations consisting of office space, retail space, repair shop, service station • Less than 1,000 sq.ft. of floor area • Laundromat (1 unit per four machines) • Carwash (1 unit per bay)

MEDIUM COMMERCIAL UNIT	• Commercial operation consisting of office space, retail space over 1,000 sq.ft. of floor area
	• Commercial operations requiring water as a process for their operation excluding washroom facilities
	  ○ Eating establishment, take out and full service under 1,000 sq.ft.
	  ○ Food/Convenience store under 1,000 sq.ft.
	  ○ Bed and Breakfast
	  ○ Funeral Home
	  ○ Hairdressing Shop

HIGH COMMERCIAL UNIT	• Commercial operations consisting of large grocery, food retail and multiple business development over 1,000 sq.ft. of floor area
	• Commercial operations requiring water as a process for their operation excluding washroom facilities
	  ○ Eating establishment, take out and full service over 1,000 sq.ft.
	  ○ Food/Convenience store over 1,000 sq.ft.
	  ○ Motel Facility
	  ○ Industrial Type Business
	  ○ Cleaning Type Business
	  ○ Medical, Dental and Physician Type facilities (less than 1,000 sq.ft. – 1 unit – over 1,000 sq.ft. – 2 units)

FARM	• ½ Small Commercial for hobby farm using water for animals – 5 head and under • Small Commercial – farm operation – no livestock and/or using water • Medium Commercial for farm using water for animals – 40 head and under

	• High Commercial for farm using water for animals – over 41 head
HOME OCCUPATION	• ½ Residential – Commercial operation which is carried on as an accessory use within a dwelling
MULTI RESIDENTIAL	• Apartment building consisting of more than one residential dwelling shall have one residential unit followed by 80% of the residential unit rate of all other residential dwellings within the building
HALLS (Single Purpose)	• ½ Small Commercial – halls without kitchen/servery facilities
HALLS with a Kitchen/Servery	• Small Commercial – maximum seating capacity of 200 people or less • High Commercial – maximum seating capacity of 201 people or more
GEOTHERMAL	• Structures using municipal water as its heat, A/C source shall be applied a standard Commercial Unit
MISCELLANEOUS	• Curling Club – Medium Commercial Unit • Royal Canadian Legion including Hall – Small Commercial • Covered Arenas and all associated operations – 3 units of High Commercial • School – 6 units of High Commercial • Small commercial – Attached Hall in excess of 1,500 sq.ft. NOTE: Municipality reserves all rights to make any necessary adjustments to all rates based on: • Factors not currently addressed in policy • Adjustment to rates based on volume content and nature of use of water
VACANCY	• Units unoccupied for a period of at least two (2) consecutive calendar months with water service maintained are eligible for the vacancy rate (20% of regular water & sewer rates). The vacancy rate will take effect in the 3rd month of the vacancy period. • Regular charges will begin for the full month when occupancy is resumed part way through a month • This applies to commercial rate categories only.

Appendix C2: Recommended Class of Customer Definitions

Rate Structure Categories

RESIDENTIAL UNIT	• Self contained residential units including apartments, churches
SMALL COMMERCIAL UNIT	• Commercial operations consisting of office space, retail space, repair shop, service station • Less than 1,000 sq.ft. of floor area • ~~Laundromat (1 unit per four machines)~~ • ~~Carwash (1 unit per bay)~~ • Funeral Homes

MEDIUM COMMERCIAL UNIT	• Commercial operation consisting of office space, retail space over 1,000 sq.ft. of floor area
	• Commercial operations requiring water as a process for their operation excluding washroom facilities
	  ○ Eating establishment, take out and full service under 1,000 sq.ft.
	  ○ Food/Convenience store under 1,000 sq.ft.
	  ○ Bed and Breakfast
	  ○ ~~Funeral Home~~
	  ○ Hairdressing/Salon Shop

HIGH/LARGE COMMERCIAL UNIT – TIER 1	• Commercial operations consisting of large grocery, food retail and multiple business development over 1,000 sq.ft. of floor area
	• Commercial operations requiring water as a process for their operation excluding washroom facilities
	  ○ Eating establishment, take out and full service over 1,000 sq.ft.
	  ○ Food/Convenience store over 1,000 sq.ft.
	  ○ Motel Facility
	  ○ ~~Industrial Type Business~~
	  ○ Cleaning Type Business
	  ○ Medical, Dental and Physician Type facilities (less than 1,000 sq.ft. – 1 unit – over 1,000 sq.ft. – 2 units)

HIGH/LARGE COMMERCIAL UNIT – TIER 2	• Carwash (1 unit per bay) • Laundromat (1 unit per four machines) • Breweries • Covered Arenas and all associated operations • Commercial operations requiring water as a process for their operation excluding washroom facilities ○ Industrial Type Business

Other

FARM	• ½ Small Commercial for hobby farm using water for animals – 5 head and under • Small Commercial – farm operation – no livestock and/or using water • Medium Commercial for farm using water for animals – 40 head and under • High Commercial for farm using water for animals – over 41 head
HOME OCCUPATION	• ½ Residential – Commercial operation which is carried on as an accessory use within a dwelling
MULTI RESIDENTIAL	• Apartment building consisting of more than one residential dwelling shall have one residential unit followed by 80% of the residential unit rate of all other residential dwellings within the building
HALLS (Single Purpose)	• ½ Small Commercial – halls without kitchen/servery facilities
HALLS with a Kitchen/Servery	• Small Commercial – maximum seating capacity of 200 people or less • High/Large Commercial Unit – Tier 1 – maximum seating capacity of 201 people or more
GEOTHERMAL	• Structures using municipal water as its heat, A/C source shall be applied a ~~standard~~ High/Large Commercial Unit – Tier 1
MISCELLANEOUS	• Curling Club – Medium Commercial Unit • Royal Canadian Legion including Hall – Small Commercial • ~~Covered Arenas and all associated operations – 3 units of High Commercial~~ • School – 6 units of High/Large Commercial Unit – Tier 1

	• ~~Small commercial~~ – Attached Hall in excess of 1,500 sq.ft. – Small Commercial NOTE: Municipality reserves all rights to make any necessary adjustments to all rates based on: • Factors not currently addressed in policy • Adjustment to rates based on volume content and nature of use of water
VACANCY	• Units unoccupied for a period of at least two (2) consecutive calendar months with water service maintained are eligible for the vacancy rate (20% of regular water & sewer rates). The vacancy rate will take effect in the 3rd month of the vacancy period. • Regular charges will begin for the full month when occupancy is resumed part way through a month • This applies to commercial rate categories only. • Vacancy applies also to properties eligible for the Municipal Act, 2001 Section 357 (d) (i), where the property was razed by fire, demolition or otherwise