Water and Wastewater Rate Study

Township of Guelph/Eramosa

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List of Acronyms and Abbreviations

Acronym	Full Description of Acronym
A.M.O.	Association of Municipalities of Ontario
cu.m.	Cubic metre
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
O.M.B.	Ontario Municipal Board
O.Reg.	Ontario Regulation
O.S.I.F.A.	Ontario Strategic Infrastructure Financing Authority
P.L.C.	Programmable Logic Controller
P.S.A.B.	Public Sector Accounting Board
P.T.I.F.	Public Transit Infrastructure Fund
S.C.A.D.A.	Supervisory Control and Data Acquisition
S.W.S.S.A.	Sustainable Water and Sewage Systems Act, 2002

Executive Summary

Executive Summary

The Township of Guelph/Eramosa retained Watson & Associates Economists Ltd. (Watson) to undertake a Water and Wastewater Rate Study and Water Financial Plan. Watson undertook the same analysis for the Township in 2015. This study aims to update the 2015 analysis for current capital and operating forecasts, costing for lifecycle cost requirements, current volumes and customer profiles. The results of this analysis provide updated water and wastewater base charges and volume rates for customers within the Township of Guelph/Eramosa. The rate analysis contained herein continues to provide fiscally responsible practices that are in line with current provincial legislation at a level of rate increases that are reasonable.

The analysis presented herein provides the following:

- The 2021 to 2030 capital spending program for the Rockwood and Hamilton Drive water systems is $1.51 million and $392,000 (inflated), respectively;
- The 2021 to 2030 capital spending program for wastewater (Rockwood only) is $2.07 million (inflated);
- The 2021 to 2030 capital spending program for water and wastewater for the Gazer-Mooney system is $401,000 (inflated);
- For Rockwood, internal financing from the wastewater D.C. reserve to the water D.C. reserve ensures that growth-related capital is adequately financed without the need to issue new debt;
- A 10-year forecast of operating expenditures was provided by staff. In general, the operating costs are assumed to increase by 2% per annum, however, for some operating costs, annual variations occur based on professional judgement of staff;
- The present rate structure (base monthly charge and a constant volume rate) is continued for the Rockwood and Hamilton Drive areas;
- Existing water customers total 2,036 in Rockwood and 219 in the Hamilton Drive area; it is anticipated the Township will see an increase of approximately 160 new customers in Rockwood and 8 new customers in the Hamilton Drive area over the next 10-year period;
- Existing wastewater customers total 2,027; the same level of increase as water customers in Rockwood (approximately 160) is assumed over the forecast period;

- The present rate structure (annual flat rate) is continued for the Gazer-Mooney area in order to recover lifecycle related costs; and
- There are currently 71 water and wastewater customers in the Gazer-Mooney area with no anticipated growth.

Based on the above information, the estimated rate increases are aimed at addressing the following:

- In order to meet the needs of the water forecast, the base charge is anticipated to increase annually by an amount between $0.54 to $0.84 (average of $0.68 per year) over the forecast period. The volume rates are anticipated to increase annually by $0.10 to $0.14 (average of $0.12 per year) per cubic metre for Rockwood and $0.03 to $0.04 per cubic metre for Hamilton Drive.
- It is recommended that the wastewater volume rates increase annually by amounts between $0.07 and $0.08 per cubic meter while the monthly base rate is anticipated to increase by an amount between $0.22 and $0.26 annually (average of $0.24 per year).
- The volume rates for water in Rockwood and Hamilton Drive have been calcuated such that the rates converge in 2031.
- The combined impact of the water and wastewater rates above equates to an increase of $37.88 on the 2021 total water and wastewater bill for customers in Rockwood (based on an annual average usage of 170 cu.m). The equates to an increase of $3.16 per month.
- The water bill in the Hamilton Drive area is anticipated to increase by $14.02 in 2021 (based on an annual average usage of 220 cu.m). This equates to an increase of $1.17 per month.
- For Gazer-Mooney, it is recommended that the flat rates increase by an average of $7.22 per year. The 2021 total bill for Gazer-Mooney is calculated to be $336.38. This equates to an increase of $6.60 for the year or an additional $0.55 per month.

The following summaries provide the water and wastewater rates and average annual bills based on the analysis provided herein over the forecast period to 2030. For Rockwood, assuming an annual volume of 170 cu.m (based on the average annual usage in this system), the water and wastewater rates are provided in Table ES-1. For Hamilton Drive, assuming an annual volume of 170 cu.m (for comparison purposes), the

water rates are provided in Table ES-2. Based on a review of the average annual water volumes billed per customer over the last few years, the average annual usage in the Hamilton Drive area was 220 cu.m. As a result, the annual water bill using an assumption of 220 cu.m of annual water usage has also been inluded in Table ES-2. Table ES-3 provides the annual flat rate for water and wastewater services in the Gazer-Mooney system. Tables ES-1 through ES-3 also provides the average annual bill and the annual increases anticipated based on the calculated rates.

Table ES-1
Township of Guelph/Eramosa
Water and Wastewater Rate Summary – Rockwood
Average Customer Water and Wastewater Bill based on 170 cu.m of usage

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Water											
Monthly Base Rate	$10.82	$11.36	$11.93	$12.53	$13.15	$13.81	$14.50	$15.22	$15.99	$16.79	$17.62
Constant Rate	2.52	2.62	2.72	2.83	2.94	3.06	3.18	3.30	3.43	3.57	3.71
Annual Base Rate Bill	**$129.84**	**$136.33**	**$143.15**	**$150.31**	**$157.82**	**$165.71**	**$174.00**	**$182.70**	**$191.83**	**$201.42**	**$211.50**
Annual Volume Bill	**$428.40**	**$445.28**	**$462.82**	**$481.06**	**$500.01**	**$519.71**	**$540.19**	**$561.47**	**$583.59**	**$606.59**	**$630.49**
Total Water Bill	**$558.24**	**$581.61**	**$605.97**	**$631.36**	**$657.83**	**$685.42**	**$714.19**	**$744.17**	**$775.43**	**$808.01**	**$841.98**
Wastewater											
Monthly Base Rate	$10.82	$11.04	$11.26	$11.48	$11.71	$11.95	$12.19	$12.43	$12.68	$12.93	$13.19
Constant Rate	3.40	3.47	3.54	3.61	3.68	3.75	3.83	3.91	3.99	4.07	4.15
Annual Base Rate Bill	**$129.84**	**$132.44**	**$135.09**	**$137.79**	**$140.54**	**$143.35**	**$146.22**	**$149.15**	**$152.13**	**$155.17**	**$158.27**
Annual Volume Bill	**$577.99**	**$589.90**	**$601.80**	**$613.70**	**$625.60**	**$637.50**	**$651.10**	**$664.70**	**$678.30**	**$691.90**	**$705.50**
Total Wastewater Bill	**$707.83**	**$722.34**	**$736.89**	**$751.49**	**$766.14**	**$780.85**	**$797.32**	**$813.85**	**$830.43**	**$847.07**	**$863.77**
Total Water and Wastewater Bill	**$1,266.07**	**$1,303.95**	**$1,342.86**	**$1,382.85**	**$1,423.98**	**$1,466.28**	**$1,511.51**	**$1,558.02**	**$1,605.86**	**$1,655.08**	**$1,705.76**
Dollar Increase - Total Annual Bill		**$37.88**	**$38.91**	**$39.99**	**$41.12**	**$42.30**	**$45.23**	**$46.51**	**$47.84**	**$49.23**	**$50.67**

Table ES-2
Township of Guelph/Eramosa
Water Rate Summary – Hamilton Drive
Average Customer Water Bill based on 220 cu.m of usage

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Monthly Base Rate	$10.82	$11.36	$11.93	$12.53	$13.15	$13.81	$14.50	$15.22	$15.99	$16.79	$17.62
Constant Rate	3.42	3.45	3.49	3.52	3.56	3.59	3.63	3.67	3.70	3.74	3.78
Annual Base Rate Bill	**$129.84**	**$136.33**	**$143.15**	**$150.31**	**$157.82**	**$165.71**	**$174.00**	**$182.70**	**$191.83**	**$201.42**	**$211.50**
Volume	170	170	170	170	170	170	170	170	170	170	170
Annual Volume Bill	**$581.40**	**$587.21**	**$593.09**	**$599.02**	**$605.01**	**$611.06**	**$617.17**	**$623.34**	**$629.57**	**$635.87**	**$642.23**
Total Annual Bill	**$711.24**	**$723.55**	**$736.23**	**$749.32**	**$762.83**	**$776.77**	**$791.17**	**$806.04**	**$821.41**	**$837.29**	**$853.72**
Dollar Increase - Total Annual Bill		**$12.31**	**$12.69**	**$13.09**	**$13.51**	**$13.94**	**$14.40**	**$14.87**	**$15.37**	**$15.89**	**$16.43**

Additional 50 cu.m of volume to reflect higher consumption in this area (220 cu.m per average customer)

Additional Volume	50	50	50	50	50	50	50	50	50	50	50
Constant Rate	3.42	3.45	3.49	3.52	3.56	3.59	3.63	3.67	3.70	3.74	3.78
Additional Water Bill	$171.00	$172.71	$174.44	$176.18	$177.94	$179.72	$181.52	$183.34	$185.17	$187.02	$188.89
Total Annual Water Bill	**$882.24**	**$896.26**	**$910.67**	**$925.50**	**$940.77**	**$956.49**	**$972.69**	**$989.37**	**$1,006.57**	**$1,024.31**	**$1,042.61**
Dollar Increase - Total Annual Bill		**$14.02**	**$14.42**	**$14.83**	**$15.27**	**$15.72**	**$16.19**	**$16.69**	**$17.20**	**$17.74**	**$18.30**

Table ES-3
Township of Guelph/Eramosa
Water & Wastewater Rate Summary – Gazer-Mooney

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Annual Flat Rate - Water & Wastewater	329.78	336.38	343.10	349.97	356.97	364.11	371.39	378.82	386.40	394.13	402.01
Total Annual Bill	**329.78**	**336.38**	**343.10**	**349.97**	**356.97**	**364.11**	**371.39**	**378.82**	**386.40**	**394.13**	**402.01**
Dollar Increase - Total Annual Bill		**$6.60**	**$6.73**	**$6.87**	**$7.00**	**$7.14**	**$7.28**	**$7.43**	**$7.58**	**$7.73**	**$7.88**

Report

Chapter 1
Introduction

1. Introduction

1.1 Background

The Township of Guelph/Eramosa provides water via two distribution systems: Hamilton Drive Water Supply System and Rockwood Water Supply System.

The Hamilton Drive Water Supply System obtains its entire water supply from two groundwater wells (Huntington and Cross Creek) each with its own pumphouse and grade-level reservoir. The pumphouse supplies an elevated storage reservoir located on Wellington Road 38. The raw water from each well is chlorinated to protect against microbial contaminants prior to discharge into the respective grade-level reservoir. The raw water is disinfected with a sodium hypochlorite solution (chlorine) for primary and secondary disinfection requirements. The water level in the reservoir starts and stops the well pumps.

The treated water is pumped with high-lift pumps at each station through the distribution system which consists of approximately 7.2 kilometers of watermain. The high lift pumps operate based on the water level in the standpipe. Once the low water level in the standpipe is reached, the pump stations are called upon to operate in sequence and supply the distribution system and any excess water fills the standpipe to the high-water level. This system is a demand/storage system; once the standpipe is full, the high lift pumps shut down until the water level drops in the tower and the pumps are required again.

The Rockwood Water Supply System consists of three municipal groundwater wells, a booster pumping station/standpipe and distribution system (approximately 28.3 km or watermains). Two of the wells are located at the Station Street pumphouse and the other at the Bernardi Pumphouse. A fourth well known as the Milne Pumphouse is scheduled to come on-line within the first year of the study period in order to meet growth-related demands. A Supervisory Control and Data Acquisition/Programmable Logic Controller (S.C.A.D.A./P.L.C.) system monitors the operation and demands of the well pumps based on the water level in the standpipe. The raw water at the Station Street Pumphouse is primarily disinfected with a UV disinfection unit with secondary disinfection via a sodium hypochlorite solution. The Bernardi Pumphouse primary disinfection is provided through sodium hypochlorite.

The Rockwood system currently services 2,036 metered water customers and 2,027 wastewater customers. Development within this area has been proceeding at a steady pace with further growth anticipated over the next few years. The Hamilton Drive system has 219 users. One other area, known as the Gazer-Mooney area, is also serviced by municipal water, however this area is supplied directly, under agreement with the City of Guelph. There are 71 users within the Gazer-Mooney system. The Township is responsible for the lifecycle costs for the infrastructure in place (within the Township boundaries) for the Gazer-Mooney system and hence imposes a flat rate to recover these costs associated with Township infrastructure.

Municipal wastewater collection is provided to Rockwood residents by the Township while the treatment is provided, under agreement with the City of Guelph. The Rockwood system consists of five pumping stations, the Skyway monitoring station, 28.08 km of sanitary sewers and 2.70 km of forcemains. A sixth growth-related sewage pumping station will be assumed by the Township early in the study forecast period. The Gazer-Mooney area is also serviced by municipal wastewater treatment; this is also through an agreement with the City of Guelph. Similar as for water, the Township retains responsibility for the localized infrastructure, so charges are imposed by the Township for the long-term replacement of this infrastructure.

The Township currently imposes a base charge and charges on a volume basis for both water and wastewater (for Rockwood and Hamilton Drive). Wastewater charges for the Rockwood area are based upon metered water volumes. The rates for both water and wastewater are in place to recover capital and operating costs related to the respective systems. Table 1-1 provides the existing rates currently in effect for the Rockwood and Hamilton Drive Areas.

Table 1-1
Township of Guelph/Eramosa – Rockwood & Hamilton Drive
Water and Wastewater Rates – 2020

2020 - Water Billing Rates		
Base Charge		
Rockwood	10.82	
Hamilton Drive	10.82	
Volume Charge		
$	2.52	Rockwood per m^3
$	3.42	Hamilton Drive per m^3

2020 - Wastewater Billing Rates		
Base Charge		
Rockwood	10.82	
Hamilton Drive	n/a	
Volume Charge		
$	3.40	Rockwood per m^3

The flat rate for water and wastewater charges in the Gazer-Mooney area currently in effect is presented in Table 1-2.

Table 1-2
Township of Guelph/Eramosa – Gazer-Mooney
Water and Wastewater Rates – 2020

2020 - Combined Water & Wastewater	
Annual Flat Rate - Gazer-Mooney Area (lifecycle charge only)	$329.78

With the legislative changes continuing to be made across Ontario as a result of the Walkerton crisis, municipalities will be required to conform to new statutes governing the management of water and wastewater systems. Watson & Associates Economists Ltd. (Watson) was retained by the Township of Guelph/Eramosa 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 ten-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 ten 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; and
- Provide staff and Committee/Council the findings to assist in gaining approval of the rates for 2021 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 wastewater."

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.

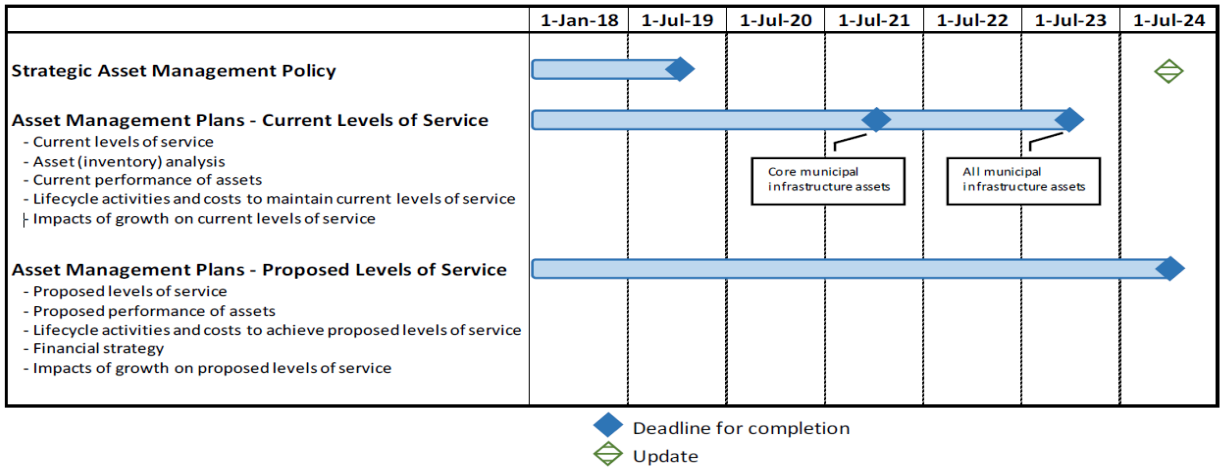
Regulations will prescribe:

- 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:



Every municipality in Ontario was required 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, 2021):
    - 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, 2023):
    - Same steps as Phase 1 but for all assets.
- Phase 3 – Asset Management Plan (by July 1, 2024):
    - 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, 2021 (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.

Upon completion of the asset management plan for water and wastewater services, the Township will need to consider the impacts on the capital plan provided herein.

1.8 Forecast Growth and Servicing Requirements

The Township of Guelph/Eramosa services 2,255 water customers (2,036 customers within the Rockwood area and 219 in the Hamilton Drive area) as well as 2,027 Rockwood customers with wastewater services. Information on the existing number of customers and existing billable water volumes was obtained from the Township.

Water usage in Hamilton Drive Area has averaged 220 cu.m per customer annually over the past three years and in Rockwood, the water usage has averaged 170 cu.m per customer over the same period. For forecasting future water volumes, the average volume per residential customer of 220 cu.m has been assumed for new Hamilton Drive Area water customers and 170 cu.m for new Rockwood water customers.

For forecasting future billable wastewater volumes in Rockwood, the average volume per residential customer of 170 cu.m has been used.

For future water customers to be added to the systems, consideration has been given to development potential for both the Hamilton Drive and Rockwood areas. A review of the existing and potential subdivision plans has provided the basis for the customer forecast. For wastewater, the same information has been used for new residents in Rockwood. There are currently 71 customers provided with water and wastewater services in the Gazer-Mooney area, however, there is no growth anticipated over the 10-year forecast period.

Table 1-3 provides for the forecast of water users and volumes in the Rockwood area, Table 1-4 provides the forecast of water users and volumes in Hamilton Drive area and Table 1-5 provides for the forecast of wastewater users and volumes in Rockwood.

Table 1-3
Township of Guelph/Eramosa
2020 to 2030 Water System Forecast – Rockwood

Rockwood Water Users Forecast

Year	Total Users	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2020	36	18	36	36	36	36	36	36	36	36	36	36
2021	48		24	48	48	48	48	48	48	48	48	48
2022	15			8	15	15	15	15	15	15	15	15
2023	10				5	10	10	10	10	10	10	10
2024	0					-	-	-	-	-	-	-
2025	50						25	50	50	50	50	50
2026	0							-	-	-	-	-
2027	0								-	-	-	-
2028	0									-	-	-
2029	0										-	-
2030	0											-
Total	**159**	**18**	**60**	**92**	**104**	**109**	**134**	**159**	**159**	**159**	**159**	**159**
m^3/user	170	170	170	170	170	170	170	170	170	170	170	170
Annual Flow		**3,055**	**10,182**	**15,612**	**17,649**	**18,497**	**22,739**	**26,982**	**26,982**	**26,982**	**26,982**	**26,982**

Water Customer Forecast	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	2,036	2,036	2,036	2,036	2,036	2,036	2,036	2,036	2,036	2,036	2,036
New - Growth	18	60	92	104	109	134	159	159	159	159	159
Total	**2,054**	**2,096**	**2,128**	**2,140**	**2,145**	**2,170**	**2,195**	**2,195**	**2,195**	**2,195**	**2,195**

Water Volume Forecast (m^3)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	327,799	327,799	327,799	327,799	327,799	327,799	327,799	327,799	327,799	327,799	327,799
New	3,055	10,182	15,612	17,649	18,497	22,739	26,982	26,982	26,982	26,982	26,982
Total	**330,854**	**337,981**	**343,411**	**345,448**	**346,296**	**350,538**	**354,781**	**354,781**	**354,781**	**354,781**	**354,781**

Table 1-4
Township of Guelph/Eramosa
2020 to 2030 Water System Forecast – Hamilton Drive

Hamilton Drive Water Users Forecast

Year	Total Users	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2020		-	-	-	-	-	-	-	-	-	-	-
2021	2		1	2	2	2	2	2	2	2	2	2
2022	2			1	2	2	2	2	2	2	2	2
2023	1				1	1	1	1	1	1	1	1
2024	1					1	1	1	1	1	1	1
2025	1						1	1	1	1	1	1
2026								-	-	-	-	-
2027									-	-	-	-
2028	1									1	1	1
2029											-	-
2030												-
Total	**8**	**-**	**1**	**3**	**5**	**6**	**7**	**7**	**7**	**8**	**8**	**8**
m^3/user	220	220	220	220	220	220	220	220	220	220	220	220
Annual Flow		**-**	**220**	**659**	**1,099**	**1,319**	**1,539**	**1,539**	**1,539**	**1,759**	**1,759**	**1,759**

Water Customer Forecast	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	219	219	219	219	219	219	219	219	219	219	219
New - Growth	-	1	3	5	6	7	7	7	8	8	8
Total	**219**	**220**	**222**	**224**	**225**	**226**	**226**	**226**	**227**	**227**	**227**

Water Volume Forecast (m^3)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	47,083	47,083	47,083	47,083	47,083	47,083	47,083	47,083	47,083	47,083	47,083
New	-	220	659	1,099	1,319	1,539	1,539	1,539	1,759	1,759	1,759
Total	**47,083**	**47,303**	**47,742**	**48,182**	**48,402**	**48,622**	**48,622**	**48,622**	**48,842**	**48,842**	**48,842**

Table 1-5
Township of Guelph/Eramosa
2020 to 2030 Wastewater System Forecast – Rockwood

Year	Total Users	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2020	36	18	36	36	36	36	36	36	36	36	36	36
2021	48		24	48	48	48	48	48	48	48	48	48
2022	15			8	15	15	15	15	15	15	15	15
2023	10				5	10	10	10	10	10	10	10
2024	0					-	-	-	-	-	-	-
2025	50						25	50	50	50	50	50
2026	0							-	-	-	-	-
2027	0								-	-	-	-
2028	0									-	-	-
2029	0										-	-
2030	0											-
Total	**159**	**18**	**60**	**92**	**104**	**109**	**134**	**159**	**159**	**159**	**159**	**159**
m^3/user	170	170	170	170	170	170	170	170	170	170	170	170
Annual Flow		**3,060**	**10,200**	**15,640**	**17,680**	**18,530**	**22,780**	**27,030**	**27,030**	**27,030**	**27,030**	**27,030**

Wastewater Customer Forecast	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	2,027	2,027	2,027	2,027	2,027	2,027	2,027	2,027	2,027	2,027	2,027
New - Growth	18	60	92	104	109	134	159	159	159	159	159
Total	**2,045**	**2,087**	**2,119**	**2,131**	**2,136**	**2,161**	**2,186**	**2,186**	**2,186**	**2,186**	**2,186**

Wastewater Flows Forecast (m^3)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	327,799	327,799	327,799	327,799	327,799	327,799	327,799	327,799	327,799	327,799	327,799
New	3,060	10,200	15,640	17,680	18,530	22,780	27,030	27,030	27,030	27,030	27,030
Total	**330,859**	**337,999**	**343,439**	**345,479**	**346,329**	**350,579**	**354,829**	**354,829**	**354,829**	**354,829**	**354,829**

Chapter 2
Capital Infrastructure Needs

2. Capital Infrastructure Needs

2.1 Capital Forecast

Capital forecasts have been provided for each of the water and wastewater systems and are presented on Tables 2-1 through 2-3 (note: the costs are provided in uninflated dollars). The basis for these forecasts is the Township's Capital Budget and works identified as asset replacement needs based on the inventory data provided for the water and wastewater systems.

A summary of the capital works related to the water and wastewater services is provided on the following tables.

Table 2-1
Township of Guelph/Eramosa
2021 to 2030 Water Capital Forecast Summary (Uninflated $) – Rockwood & Hamilton Drive

Description	Total 2021-2030	Years Undertaken
Rockwood		
Capital Expenditures:		
Shanley Street - Dowler to Main St. W/M connection	60,000	2024
Rockwood Cemetery - Academy to George Ware Lane W/M connection	125,000	2028
Lifecycle:	-	
Rockwood Booster - High lift Pump Replacement	12,000	2023
Rockwood Booster - Replace controls (MCC/PLC)	100,000	2027
Station St Wells - Replace Well Pumps (high lift)	24,000	2025
Station St Wells - Replace well Piping	20,000	2025
Station St Wells - Clean/airlift wells	20,000	2025
Station St. Pumphouse - Rebuild UV disinfection system	50,000	2023
Station St. Pumphouse - Replace PRV	12,000	2025
Station St. Pumphouse - Rebuild/replace controls	80,000	2025
Station St. Pumphouse - Replace roof	12,000	2026
Station St. Pumphouse - Replace turbity analyzer	7,000	2027
Station St. Pumphouse - Replace flow meter	14,000	2029
Bernardi Well - Replace Well Pump (low lift)	12,000	2025
Bernardi Well - Replace well Piping	10,000	2025
Bernardi Well - Clean/airlift well	10,000	2025
Bernardi Pumphouse - Replace High lift pumps with VFD	24,000	2025
SCADA	200,000	2021-2022
Fleet - Unit 118 - 2022 replacement	27,000	2022
Fleet - Unit 123 - 2016 in service - 2026 Replacement	34,500	2026
Fleet - Unit 127 - 2018 in service - 2028 Replacement	33,500	2028
Studies:		
Studies - Water/Wastewater Rate Study	35,000	2025
Growth Related:		
Catherine Street - Railway watermain crossing (From budget)	430,000	2022
Fleet - New unit for new 2021 Staff (From Budget)	35,000	2021
Water and Wastewater Master Servicing Study	**15,000**	2023
Total Rockwood	**1,402,000**	
Hamilton Drive		
Capital Expenditures:		
Hamilton Drive Standpipe - New storage shed & backup power	50,000	2024
Pandora Drive - Bedford to Woodfield W/M looping	82,500	2025

Table 2-1 (Cont'd)
Township of Guelph/Eramosa
2021 to 2030 Water Capital Forecast Summary (Uninflated $) – Rockwood & Hamilton Drive

Description	Total 2021-2030	Years Undertaken
Lifecycle:		
Hamilton Drive Standpipe - Clean and Seal tank, anode replacement	65,000	2026
Huntington Wells - Replace Well Pump (low lift)	12,000	2025
Huntington Wells - Replace well Piping	10,000	2025
Huntington Wells - Clean/airlift well	10,000	2025
Huntington Pumphouse - Replace High lift pumps with VFD	24,000	2025
Huntington Pumphouse - Replace flow meter	10,000	2029
Huntington Pumphouse - Replace asphlat shingle roof with Steel	12,000	2027
Cross Creek Wells - Replace Well Pump (low lift)	12,000	2025
Cross Creek Wells - Replace well Piping	10,000	2025
Cross Creek Wells - Clean/airlift well	10,000	2025
Cross Creek Pumphouse - Replace High lift pumps with VFD	24,000	2025
Cross Creek Pumphouse - Replace flow meter	10,000	2029
Cross Creek Pumphouse - Replace asphlat shingle roof with Steel	12,000	2027
Total Hamilton Drive	**353,500**	
Total Water	**1,755,500**	

Table 2-2
Township of Guelph/Eramosa
2021 to 2030 Wastewater Capital Forecast Summary (Uninflated $)

Description	Total 2021-2030	Years Undertaken
Capital Expenditures:		
Valley Road SPS - New Expanded Wetwell	750,000	2028-2029
Lifecycle:		
Alma Pretreatment - Replace Transmission Pumps	25,000	2025
Valley Road SPS - Replace Sewage Pumps	160,000	2029
Mill Run SPS - Replace Pump 1	27,000	2021
Mill Run SPS - Replace piping	60,000	2029
Ridge Road SPS - Replace internal piping	60,000	2021
Skyway Monitoring Station - Replace H2S Monitor	15,000	2022
Guelph Forcemain - Replace 400 m from plant	500,000	2024-2025
SCADA	100,000	2023
Fleet - Unit 117 - 2020 replacement		
Fleet - Unit 118 - 2022 replacement	13,000	2022
Fleet - Unit 123 - 2016 in service - 2026 Replacement	17,500	2026
Fleet - Unit 127 - 2018 in service - 2028 Replacement	16,500	2028
Growth Related:		
Sanitary Inflow Investigation (Smoke testing)	45,000	2023
Water and Wastewater Master Servicing Study	15,000	2023
Total Wastewater	**1,804,000**	

Table 2-3
Township of Guelph/Eramosa
2021 to 2030 Water and Wastewater Capital Forecast Summary (Uninflated $) – Gazer-Mooney

Description	Total 2021-2030	Years Undertaken
Lifecycle:		
Gazer Mooney Wastewater Facilities	329,140	2030
Total	**329,140**	

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.

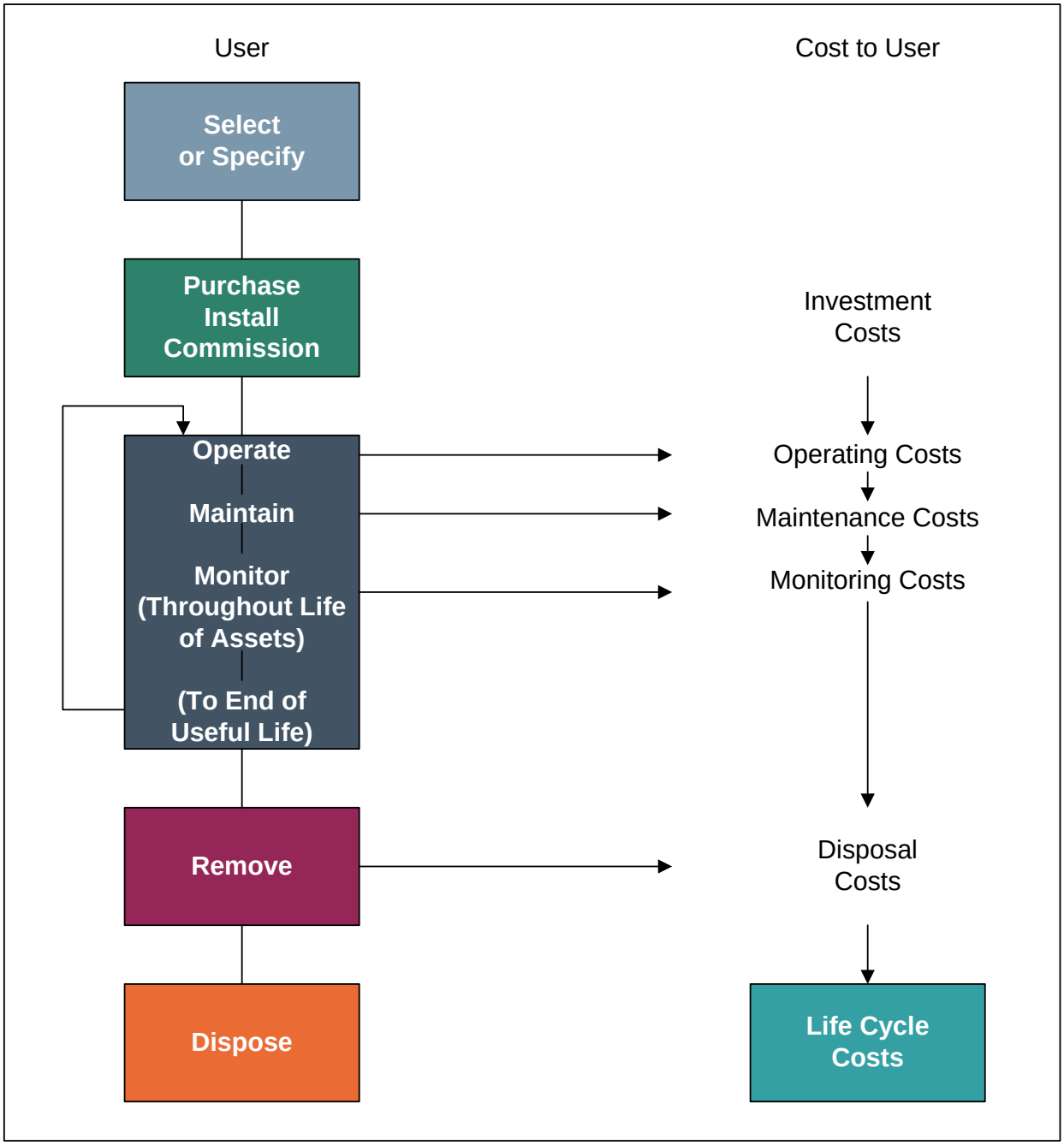
3.1.2 Financing Costs

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 Township. 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.

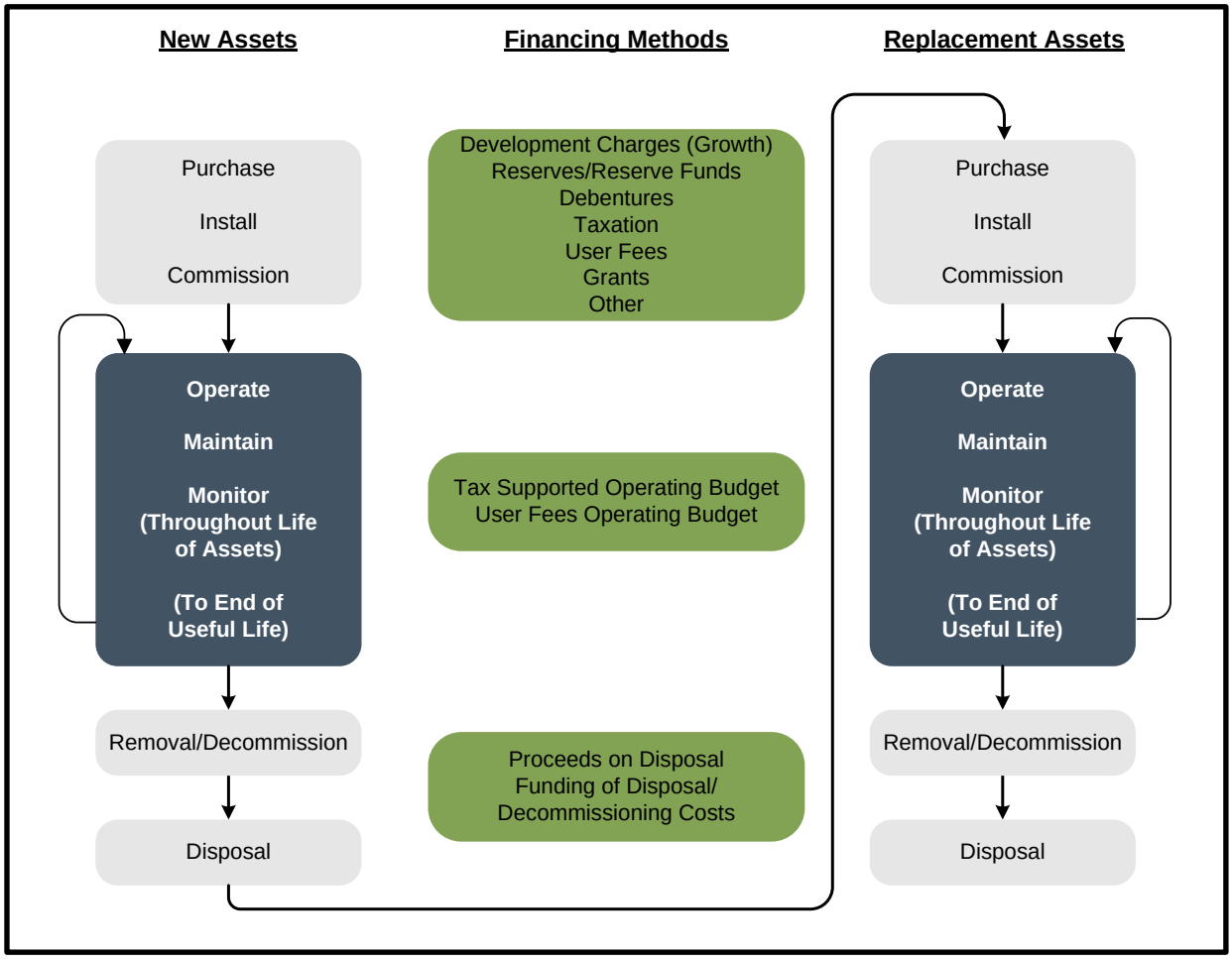
As referred to earlier, growth-related financing methods such as development charges and developer contributions could be utilized to finance the growth-related component of the new asset. These revenues are collected (indirectly) from the new homeowner who benefits directly from the installation of 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

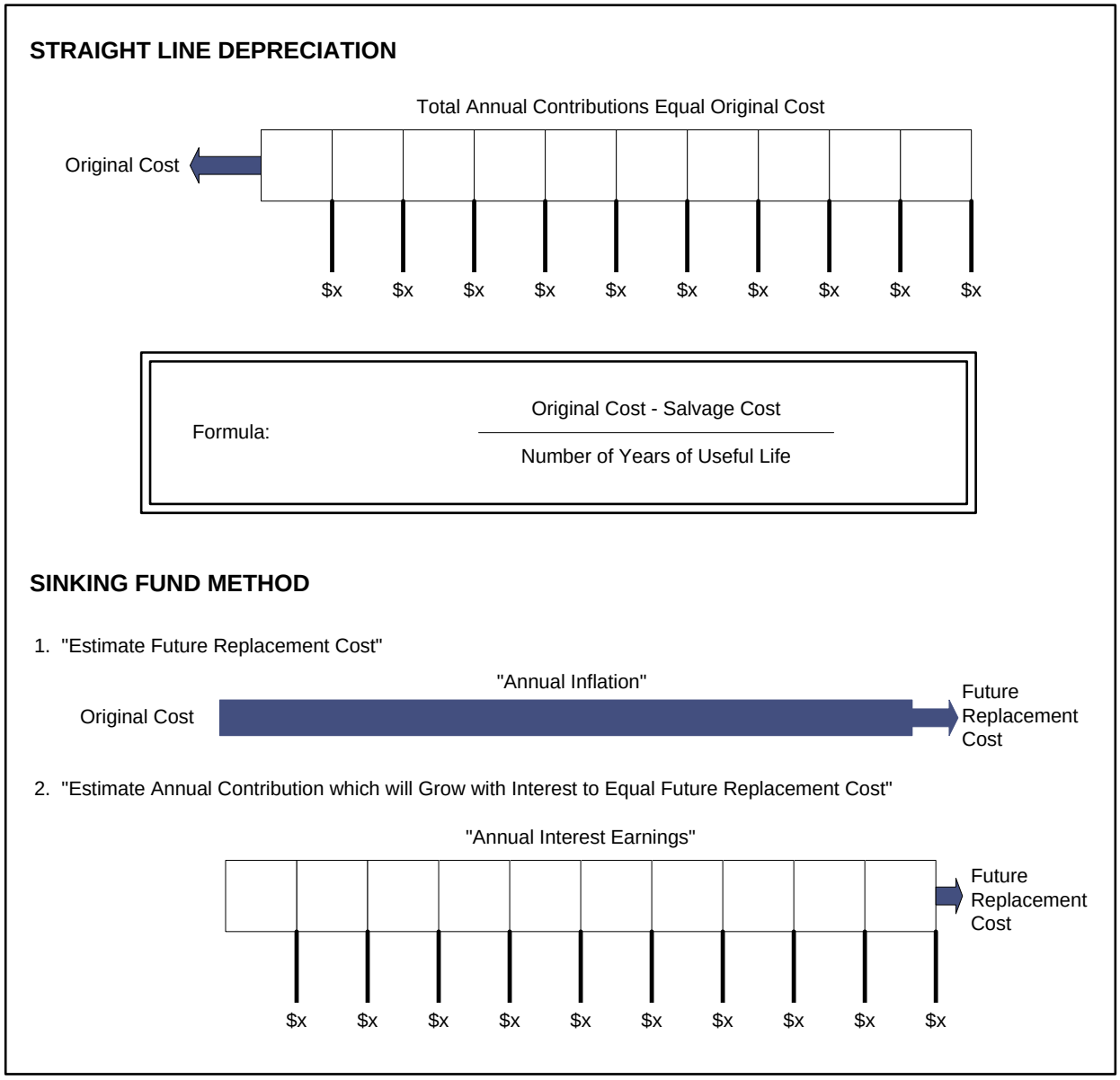
There are two fundamental methods of calculating the cost of the usage of an asset and for the provision of the revenue required when the time comes to retire and replace it. The first method is the Depreciation Method. This method recognizes the reduction in the value of the asset through wear and tear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

Detailed water and wastewater systems inventory information was obtained from the Township. The age of portions of the Hamilton Drive area water system dates back to the late 1960's. In the Rockwood area, the age of the original water and wastewater systems dates back to the early 1970's. Gazer-Mooney water and sewer mains date back to 1980. The total value of Township-owned existing water infrastructure is $22.67

million in Rockwood and $7.37 million in Hamilton Drive. The value of existing wastewater infrastructure in Rockwood is $44.51 million, and the existing water and wastewater infrastructure in Gazer-Mooney is $3.67 million.

The detailed water and wastewater inventories are provided in Appendices A through D. As well, the lifecycle "sinking fund" contribution amounts for each piece of infrastructure have also been included. These calculations determine the level of investment the Township may wish to consider as part of its budgeting practices. This information is summarized in Figure 3-4.

Figure 3-4
Township of Guelph/Eramosa
Summary of Water and Wastewater Infrastructure

Area	Total Replacement Value	Suggested amount to be included in 10-year forecast based on estimated life	Amount included in 10-year forecast*	Net Replacement for Future Lifecycle	Annual Lifecycle Replacement
Water - Rockwood					
Rockwood Water Facilities	7,083,990	907,630		6,176,360	318,717
Rockwood Water Meters	610,800	183,000		427,800	23,944
Rockwood Water Hydrants	841,150	-	1,055,500	841,150	38,421
Rockwood Watermains	14,009,540	-		14,009,540	540,122
Rockwood Share of Vehicles	126,381	126,381		-	-
Total Water - Rockwood	**22,671,861**	**1,217,011**	**1,055,500**	**21,454,850**	**921,204**
Water - Hamilton Drive					
Hamilton Drive Water Facilities	1,820,610	249,380		1,571,230	63,064
Hamilton Drive Water Meters	64,800	22,800		42,000	2,814
Hamilton Drive Water Hydrants	223,340	26,800	221,000	196,540	8,019
Hamilton Drive Watermains	5,227,140	-		5,227,140	139,532
Hamilton Drive Share of Vehicles	31,595	31,595		-	-
Total Water - Hamilton Drive	**7,367,485**	**330,575**	**221,000**	**7,036,910**	**213,429**
Wastewater					
Rockwood Wastewater Facilities	4,885,370	715,860		4,169,510	206,784
Rockwood Wastewater Facilities - Skyway Monitoring Station	890,540	17,870		872,670	45,196
Rockwood Sanitary Sewers	34,983,700	874,990	1,758,500	34,108,710	1,506,131
Rockwood Wastewater Forcemains	2,162,840	-		2,162,840	109,379
Rockwood Sanitary Manholes	1,518,690	37,610		1,481,080	48,575
Rockwood Wastewater Share of Vehicles	67,704	67,704		-	-
Total Wastewater	**44,508,844**	**1,714,034**	**1,758,500**	**42,794,810**	**1,916,065**
Water and Wastewater - Gazer-Mooney					
Gazer-Mooney Watermains	934,300	-		934,300	26,878
Gazer Mooney Wastewater Facilities	742,910	329,140	329,140	413,770	23,503
Gazer Mooney Wastewater Forcemains	620,500	-		620,500	17,851
Gazer Mooney Wastewater Sewers	1,375,290	-		1,375,290	39,564
Total Water and Wastewater - Gazer-Mooney	**3,673,000**	**329,140**	**329,140**	**3,343,860**	**107,796**
Total	**78,221,190**	**3,590,760**	**3,364,140**	**74,630,430**	**3,158,495**

Investment per customer is $11,135 for water and $21,958 for wastewater (total $33,093) in Rockwood, $33,641 for water in Hamilton Drive and $51,732 for water and wastewater in Gazer-Mooney

*Note: these amounts include the 2020 budget year plus the 2021 to 2030 forecast years

With respect to lifecycle costing contained in the Appendices, the following information was taken into consideration:

- approximate age;
- material type;
- main lengths;

- diameter of the mains;
- estimated useful life; and
- estimated replacement costs.

Summaries of both water and wastewater assets are shown on Figures 3-5 through 3-8 based on the system. These figures show when the assets are due to be replaced and the cost of replacement in 2020 dollars.

Figure 3-5
Township of Guelph/Eramosa
Summary of Water (Rockwood) Infrastructure Replacement Years (2020 $)

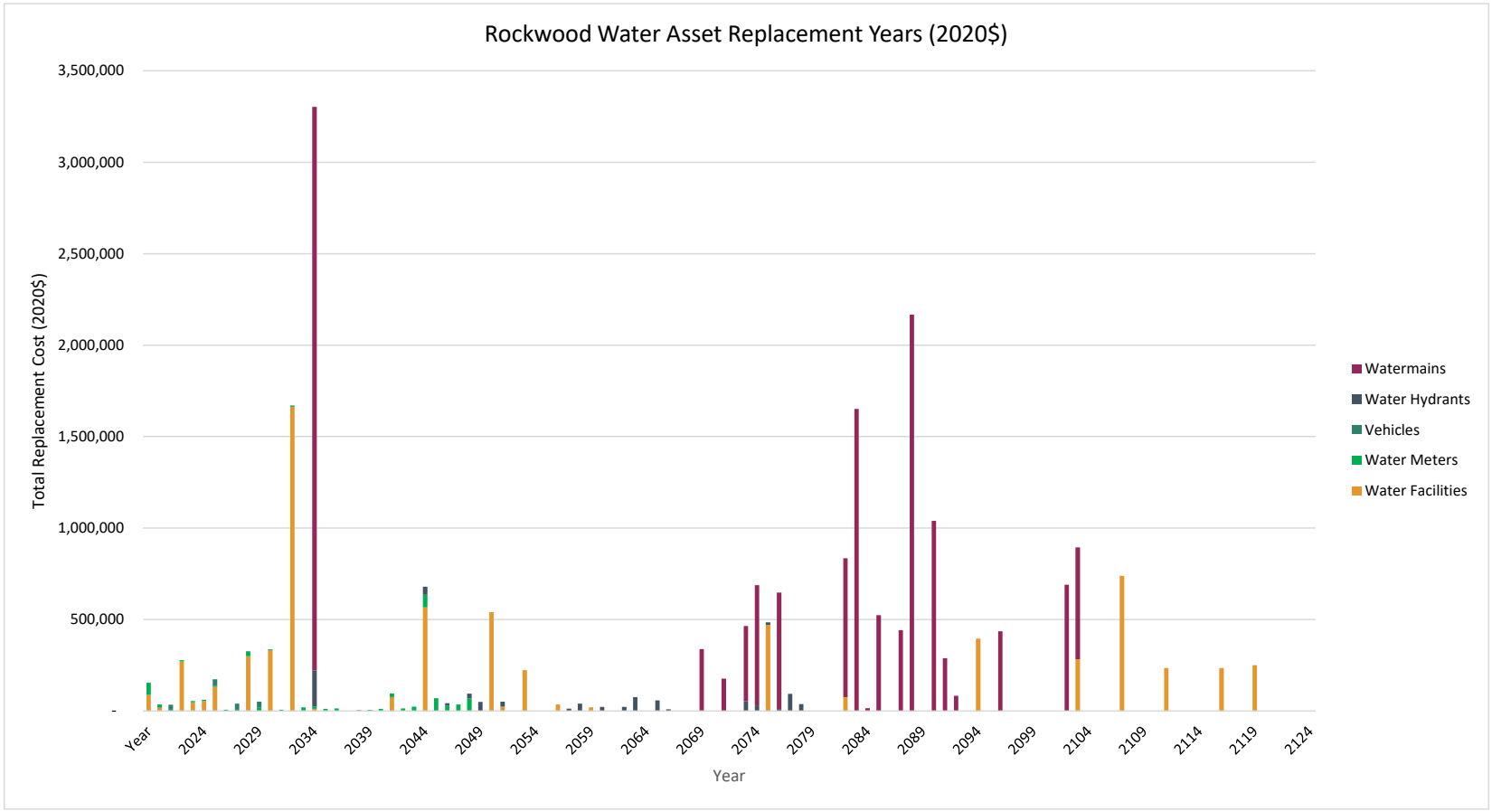


Figure 3-6
Township of Guelph/Eramosa
Summary of Water (Hamilton Drive) Infrastructure Replacement Years (2020 $)

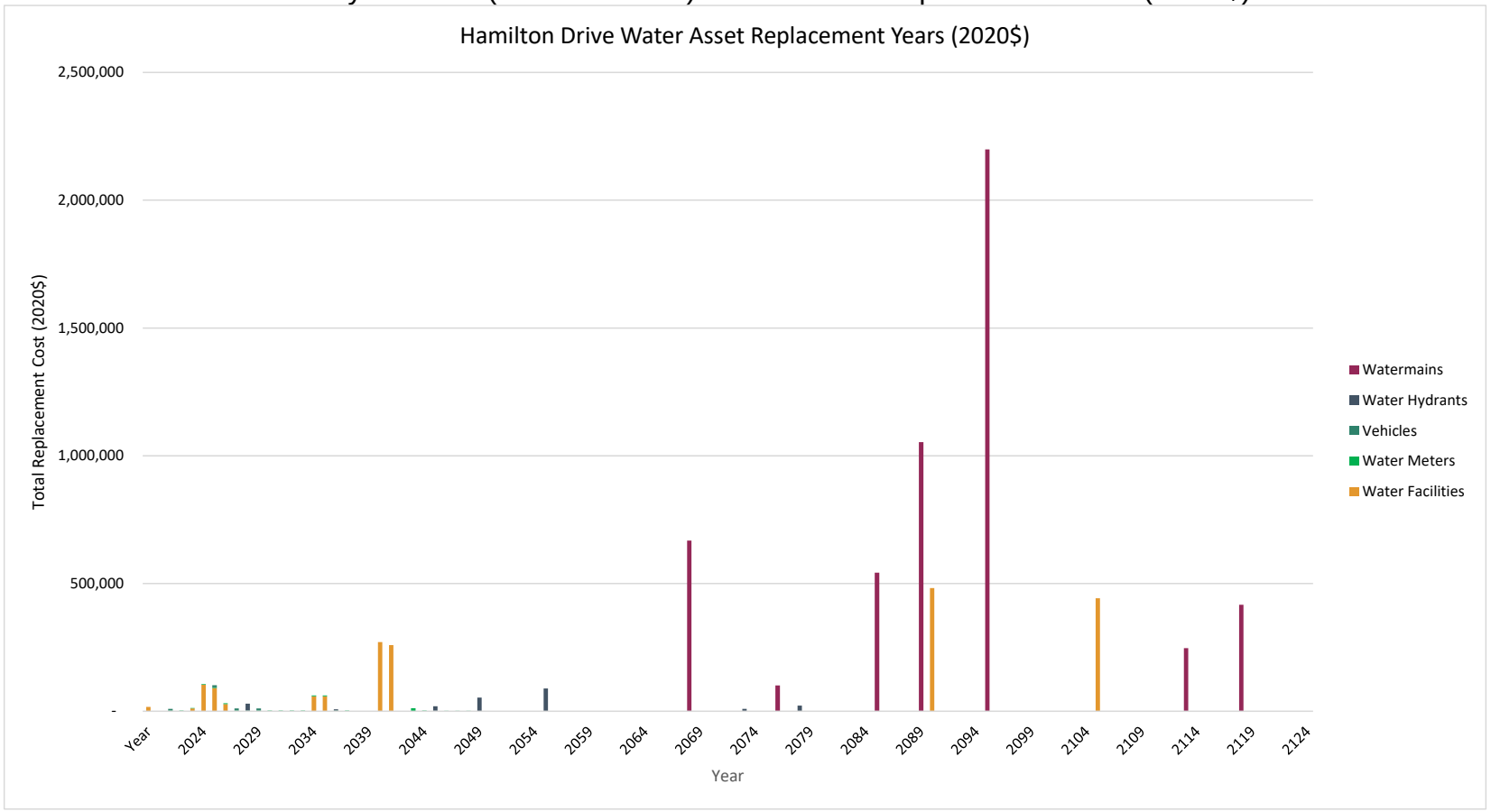


Figure 3-7
Township of Guelph/Eramosa
Summary of Wastewater (Rockwood) Infrastructure Replacement Years (2020 $)

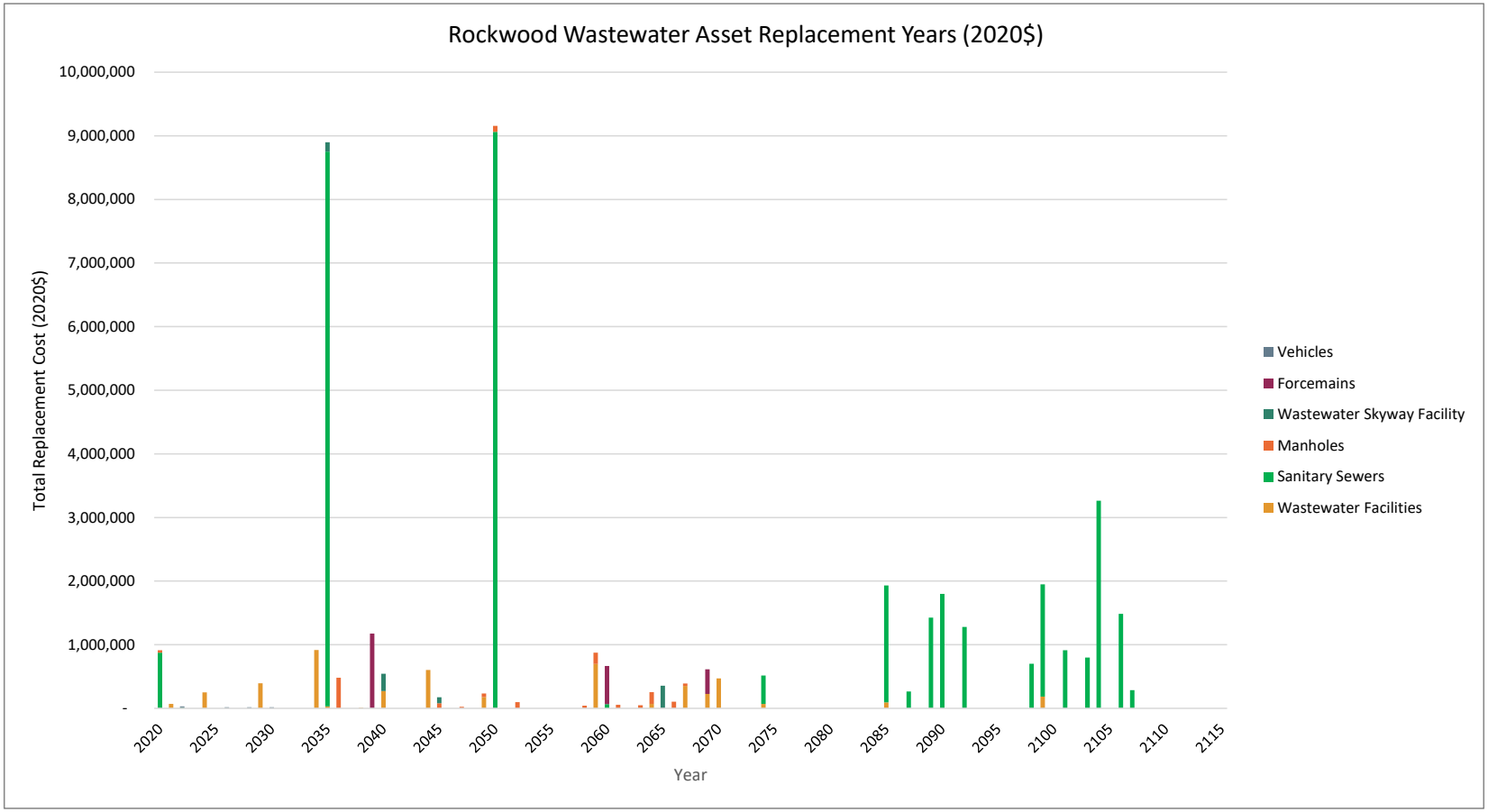
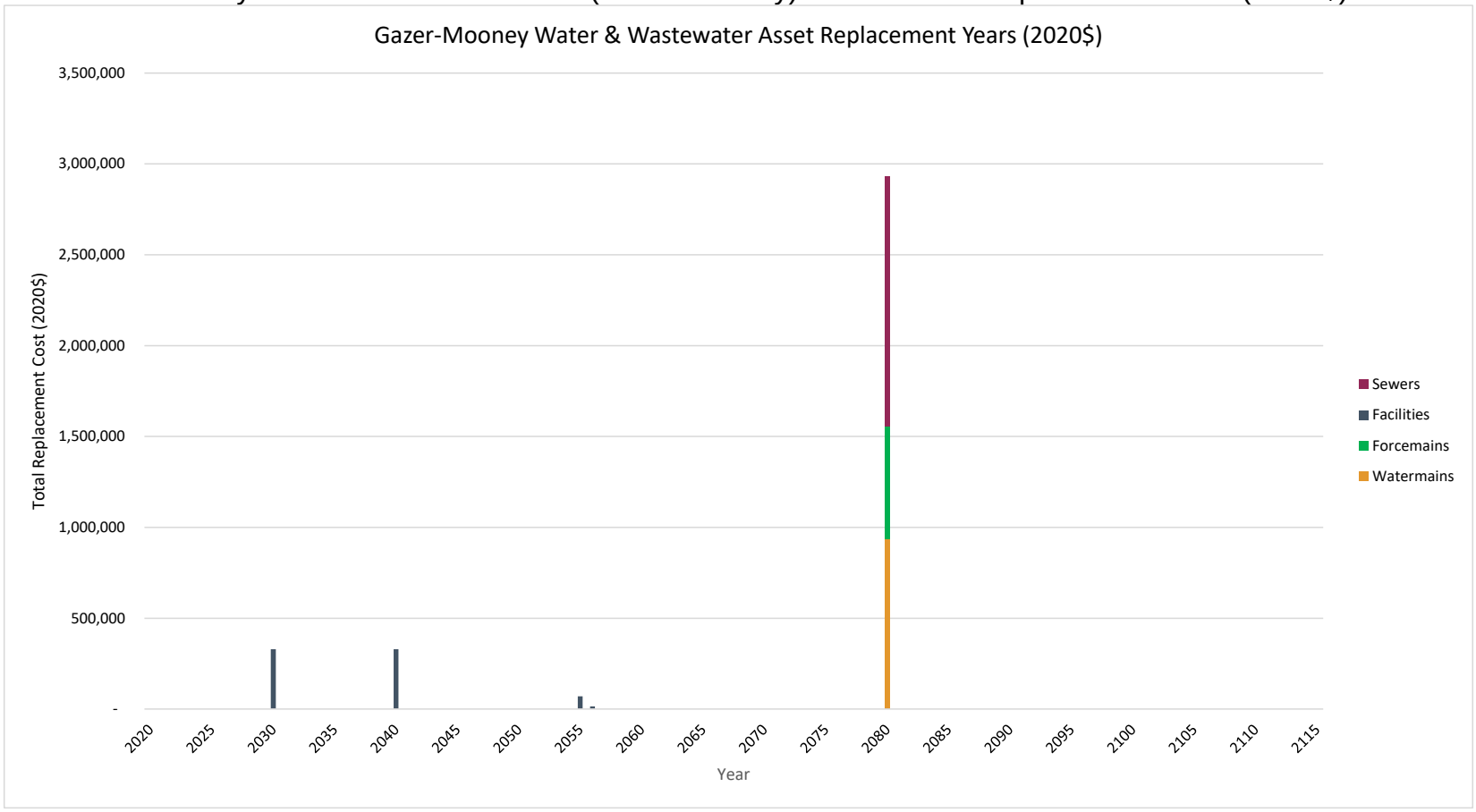


Figure 3-8
Township of Guelph/Eramosa
Summary of Water and Wastewater (Gazer-Mooney) Infrastructure Replacement Years (2020 $)



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 (Bill 98 in 1997 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
• *Grant Funding*	4.4
• *Existing Reserves/Reserve Funds*	4.5
• *Debenture Financing*	4.6
• *Infrastructure Ontario*	4.7

4.2 Development Charges Act, 1997

In November 1996, the Ontario Government introduced Bill 98, a new *Development Charges Act*. The Province's stated intentions were to "create new construction jobs and make home ownership more affordable" by reducing the charges and to "make municipal Council decisions more accountable and more cost effective." The basis for this Act is to allow municipalities to recover the growth-related capital cost of infrastructure necessary to accommodate new growth within the municipality. Generally, the Act provided the following changes to the former Act:

- Replace those sections of the 1989 Act that govern municipal development charges;
- Limit services which can be financed from development charges, specifically excluding parkland acquisition, administration buildings, and cultural, entertainment, tourism, solid waste management and hospital facilities;
- Ensure that the level of service used in the calculation of capital costs will not exceed the average level of service over the previous decade. Level of service is to be measured from both a quality and quantity perspective;
- Provide that uncommitted excess capacity available in existing municipal facilities and benefits to existing residents are removed from the calculation of the charge;
- Ensure that the development charge revenues collected by municipalities are spent only on those capital costs identified in the calculation of the development charge;
- Require municipalities to contribute funds (e.g. taxes, user charges or other non-development charge revenues) to the financing of certain projects primarily funded from development charges. The municipal contribution is 10 percent for services such as recreation, parkland development, libraries, etc.;
- Permit (but apparently not require) municipalities to grant developers credits for the direct provision of services identified in the development charge calculation and, when credits are granted, require the municipality to reimburse the

developer for the costs the municipality would have incurred if the project had been financed from the development charge reserve fund;
- Set out provisions for front-end financing capital projects (limited to essential services) required to service new development; and
- Set out provisions for appeals and complaints.

In late 2015, the Province approved further amendments to the D.C.A. With respect to water and wastewater, the only changes are for the municipality to provide an asset management calculation for the growth-related works and for the Council to consider (but not necessarily approve) area-specific rates.

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 Local Planning Appeal Tribunal (LPAT, formerly known as the 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
- LPAT 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 LPAT 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 LPAT, 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 Grant Funding Availability

Federal Infrastructure Funding

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 is $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 has added $10.1 billion for trade and transportation infrastructure and $2 billion for rural and northern communities. This funding must be implemented by agreements with each Province and Territory.

In Phase 2, Ontario will be 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.

Federal Gas Tax

The federal Gas Tax 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 federal Gas Tax 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.

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 estimated balances at December 31, 2020:

Reserve	Estimated Dec. 31 2020
Water	
Capital Reserve Fund	217,975
Development Charges Reserve Fund	84,780
Lifecycle Reserve Fund	538,639
Operating Reserve	92,591
Wastewater	
Capital Reserve Fund	742,692
Development Charges Reserve Fund	515,603
Lifecycle Reserve Fund	1,050,636
Operating Reserve	23,564
Gazer-Mooney Water & Wastewater	
Gazer-Mooney Lifecycle Replacement Reserve Fund	370,604

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 Guelph/Eramosa's calculation on Debt Capacity is shown on Schedule 81 of the Township's most recent Financial Information Return (F.I.R.). This calculates to the Township's estimated annual repayment limit of approximately $1.94 million. Based upon 10-year financing at an assumed rate of 4%, the available debt for the Township is approximately $15.75 million.

4.7 Infrastructure Ontario

Infrastructure Ontario (I.O.) is an arms-length crown corporation, which has been set up as a tool to offer low-cost and longer-term financing to assist municipalities in renewing their infrastructure (this corporation has merged the former O.S.I.F.A. into its operations). 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 a new investment product called 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 a longer term on their loans than they could obtain in the financial markets and can also benefit from significant savings on transaction costs such as legal costs 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.

The first round of the former O.S.I.F.A.'s 2004/2005 infrastructure renewal program was focused on municipal priorities of clean water infrastructure, sewage treatment facilities, municipal roads and bridges, public transit and waste management infrastructure. The focus of the program was expanded in 2005/2006 somewhat to include:

- clean water infrastructure;
- sewage infrastructure;
- waste management infrastructure;
- municipal roads and bridges;
- public transit;
- municipal long-term care homes;
- renewal of municipal social housing and culture; and
- tourism and recreation infrastructure.

With the merging of O.S.I.F.A. and I.O., the program was broadened in late 2006 to also include municipal administrative buildings, local police and fire stations, emergency vehicles and equipment, ferries, docks and municipal airports.

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.

The analysis provided herein assumes that the Township will not require debt financing for the capital projects identified.

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 Guelph/Eramosa for the capital expenditures (inflated) provided in Chapter 2:

Description	Water 2021-2030	Wastewater 2021-2030	Water & Wastewater - Gazer-Mooney 2021-2030
Capital Financing			
Provincial/Federal Grants	-	-	-
Development Charges Reserve Fund	405,168	63,000	-
Non-Growth Related Debenture Requirements	-	-	-
Growth Related Debenture Requirements	-	-	-
Operating Contributions	-	-	-
Water/Wastewater Reserves	1,499,832	2,002,000	401,000
Total Capital Financing	**1,905,000**	**2,065,000**	**401,000**

Tables 4-1 through 4-3 provide for the full capital expenditure and funding programs by year for water and wastewater in the Rockwood, Hamilton Drive & Gazer-Mooney systems.

Table 4-1
Township of Guelph/Eramosa
Capital Budget Forecast – Water (inflated $)
Rockwood and Hamilton Drive

Description	Total	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Rockwood											
Capital Expenditures:	-	-	-	-	-	-	-	-	-	-	-
David Masson Park - Gzowski to Christie Watermain Connection	-	-	-	-	-	-	-	-	-	-	-
Shanley Street - Dowler to Main St. W/M connection	65,000	-	-	-	65,000	-	-	-	-	-	-
Rockwood Cemetery - Academy to George Ware Lane W/M connection	146,000	-	-	-	-	-	-	-	146,000	-	-
Lifecycle:	-	-	-	-	-	-	-	-	-	-	-
Rockwood Booster - High lift Pump Replacement	13,000	-	-	13,000	-	-	-	-	-	-	-
Rockwood Booster - Replace controls (MCC/PLC)	115,000	-	-	-	-	-	-	115,000	-	-	-
Station St Wells - Replace Well Pumps (high lift)	26,000	-	-	-	-	26,000	-	-	-	-	-
Station St Wells - Replace well Piping	22,000	-	-	-	-	22,000	-	-	-	-	-
Station St Wells - Clean/airlift wells	22,000	-	-	-	-	22,000	-	-	-	-	-
Station St. Pumphouse - Rebuild UV disinfection system	53,000	-	-	53,000	-	-	-	-	-	-	-
Station St. Pumphouse - Replace PRV	13,000	-	-	-	-	13,000	-	-	-	-	-
Station St. Pumphouse - Rebuild/replace controls	88,000	-	-	-	-	88,000	-	-	-	-	-
Station St. Pumphouse - Replace roof	14,000	-	-	-	-	-	14,000	-	-	-	-
Station St. Pumphouse - Replace turbity analyzer	8,000	-	-	-	-	-	-	8,000	-	-	-
Station St. Pumphouse - Replace flow meter	17,000	-	-	-	-	-	-	-	-	17,000	-
Bernardi Well - Replace Well Pump (low lift)	13,000	-	-	-	-	13,000	-	-	-	-	-
Bernardi Well - Replace well Piping	11,000	-	-	-	-	11,000	-	-	-	-	-
Bernardi Well - Clean/airlift well	11,000	-	-	-	-	11,000	-	-	-	-	-
Bernardi Pumphouse - Replace High lift pumps with VFD	26,000	-	-	-	-	26,000	-	-	-	-	-
Alma Street - Inkerman to Pasmore W/m replacement	-	-	-	-	-	-	-	-	-	-	-
SCADA	206,000	102,000	104,000	-	-	-	-	-	-	-	-
Fleet - Unit 117 - 2020 replacement	-	-	-	-	-	-	-	-	-	-	-
Fleet - Unit 118 - 2022 replacement	28,000	-	28,000	-	-	-	-	-	-	-	-
Fleet - Unit 123 - 2016 in service - 2026 Replacement	39,000	-	-	-	-	-	39,000	-	-	-	-
Fleet - Unit 127 - 2018 in service - 2028 Replacement	39,000	-	-	-	-	-	-	-	39,000	-	-
Studies:	-	-	-	-	-	-	-	-	-	-	-
Studies - Water/Wastewater Rate Study	39,000	-	-	-	-	39,000	-	-	-	-	-
Studies - Station Street GUDI Review	-	-	-	-	-	-	-	-	-	-	-
Growth Related:	-	-	-	-	-	-	-	-	-	-	-
Catherine Street - Railway watermain crossing (From budget)	447,000	-	447,000	-	-	-	-	-	-	-	-
Fleet - New unit for new 2021 Staff (From Budget)	36,000	36,000	-	-	-	-	-	-	-	-	-
Milne Pumphouse - Completion of 2019 construction	-	-	-	-	-	-	-	-	-	-	-
Water and Wastewater Master Servicing Study	16,000	-	-	16,000	-	-	-	-	-	-	-
Hamilton Drive											
Capital Expenditures:	-	-	-	-	-	-	-	-	-	-	-
Hamilton Drive Standpipe - New storage shed & backup power	54,000	-	-	-	54,000	-	-	-	-	-	-
Pandora Drive - Bedford to Woodfield W/M looping	91,000	-	-	-	-	91,000	-	-	-	-	-

Table 4-1
Township of Guelph/Eramosa
Capital Budget Forecast – Water (inflated $) (Cont'd)
Rockwood and Hamilton Drive

Description	Total	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Lifecycle:	-	-	-	-	-	-	-	-	-	-	-
Hamilton Drive Standpipe - Clean and Seal tank, anode replacement	73,000	-	-	-	-	-	73,000	-	-	-	-
Huntington Wells - Replace Well Pump (low lift)	13,000	-	-	-	-	13,000	-	-	-	-	-
Huntington Wells - Replace well Piping	11,000	-	-	-	-	11,000	-	-	-	-	-
Huntington Wells - Clean/airlift well	11,000	-	-	-	-	11,000	-	-	-	-	-
Huntington Pumphouse - Replace High lift pumps with VFD	26,000	-	-	-	-	26,000	-	-	-	-	-
Huntington Pumphouse - Replace flow meter	12,000	-	-	-	-	-	-	-	-	12,000	-
Huntington Pumphouse - Replace asphlat shingle roof with Steel	14,000	-	-	-	-	-	-	14,000	-	-	-
Cross Creek Wells - Replace Well Pump (low lift)	13,000	-	-	-	-	13,000	-	-	-	-	-
Cross Creek Wells - Replace well Piping	11,000	-	-	-	-	11,000	-	-	-	-	-
Cross Creek Wells - Clean/airlift well	11,000	-	-	-	-	11,000	-	-	-	-	-
Cross Creek Pumphouse - Replace High lift pumps with VFD	26,000	-	-	-	-	26,000	-	-	-	-	-
Cross Creek Pumphouse - Replace flow meter	12,000	-	-	-	-	-	-	-	-	12,000	-
Cross Creek Pumphouse - Replace asphlat shingle roof with Steel	14,000	-	-	-	-	-	-	14,000	-	-	-
Total Capital Expenditures	**1,905,000**	**138,000**	**579,000**	**82,000**	**119,000**	**484,000**	**126,000**	**151,000**	**185,000**	**41,000**	**-**
Capital Financing											
Provincial/Federal Grants	-										
Development Charges Reserve Fund	405,168	32,400	356,768	16,000	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-
Lifecycle Reserve Fund	1,104,832	105,600	222,232	66,000	-	354,000	126,000	151,000	39,000	41,000	-
Water Reserve	395,000	-	-	-	119,000	130,000	-	-	146,000	-	-
Total Capital Financing	**1,905,000**	**138,000**	**579,000**	**82,000**	**119,000**	**484,000**	**126,000**	**151,000**	**185,000**	**41,000**	**-**

Table 4-2
Township of Guelph/Eramosa
Capital Budget Forecast – Wastewater (inflated $)
Rockwood

Description	Total	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Capital Expenditures											
Valley Road SPS - New Expanded Wetwell	896,000	-	-	-	-	-	-	-	59,000	837,000	-
Lifecycle:	-	-	-	-	-	-	-	-	-	-	-
Alma Pretreatment - Replace Transmission Pumps	28,000	-	-	-	-	28,000	-	-	-	-	-
Valley Road SPS - Replace Sewage Pumps	191,000	-	-	-	-	-	-	-	-	191,000	-
Mill Run SPS - Replace Pump 1	28,000	28,000	-	-	-	-	-	-	-	-	-
Mill Run SPS - Replace piping	72,000	-	-	-	-	-	-	-	-	72,000	-
Ridge Road SPS - Replace internal piping	61,000	61,000	-	-	-	-	-	-	-	-	-
Skyway Monitoring Station - Replace H2S Monitor	16,000	-	16,000	-	-	-	-	-	-	-	-
Guelph Forcemain - Replace 400 m from plant	551,000	-	-	-	54,000	497,000	-	-	-	-	-
SCADA	106,000	-	-	106,000	-	-	-	-	-	-	-
Fleet - Unit 117 - 2020 replacement	-	-	-	-	-	-	-	-	-	-	-
Fleet - Unit 118 - 2022 replacement	14,000	-	14,000	-	-	-	-	-	-	-	-
Fleet - Unit 123 - 2016 in service - 2026 Replacement	20,000	-	-	-	-	-	20,000	-	-	-	-
Fleet - Unit 127 - 2018 in service - 2028 Replacement	19,000	-	-	-	-	-	-	-	19,000	-	-
Growth Related:	-	-	-	-	-	-	-	-	-	-	-
Sanitary Inflow Investigation (Smoke testing)	47,000	-	47,000	-	-	-	-	-	-	-	-
Water and Wastewater Master Servicing Study	16,000	-	-	16,000	-	-	-	-	-	-	-
Total Capital Expenditures	**2,065,000**	**89,000**	**77,000**	**122,000**	**54,000**	**525,000**	**20,000**	**-**	**78,000**	**1,100,000**	**-**
Capital Financing											
Provincial/Federal Grants	-										
Development Charges Reserve Fund	63,000	-	47,000	16,000	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-
Lifecycle Reserve Fund	1,106,000	89,000	30,000	106,000	54,000	525,000	20,000	-	19,000	263,000	-
Wastewater Capital Reserve	896,000	-	-	-	-	-	-	-	59,000	837,000	-
Total Capital Financing	**2,065,000**	**89,000**	**77,000**	**122,000**	**54,000**	**525,000**	**20,000**	**-**	**78,000**	**1,100,000**	**-**

Table 4-3
Township of Guelph/Eramosa
Capital Budget Forecast – Gazer-Mooney Water & Wastewater (inflated $)

Description	Total	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Lifecycle:											
Gazer Mooney Wastewater Facilities	401,000	-	-	-	-	-	-	-	-	-	401,000
Total Capital Expenditures	**401,000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**401,000**
Capital Financing											
Provincial/Federal Grants	-										
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Gazer-Mooney Lifecycle Reserve Fund	401,000	-	-	-	-	-	-	-	-	-	401,000
Total Capital Financing	**401,000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**401,000**

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 (2021 to 2030) are based on the 2020 operating budgets. The operating expenditures have been provided by staff. Generally, they have been adjusted over the forecast period by an annual inflationary factor of 2.0%, however, in certain instances, staff have provided variations in the costs based on a direct review of each item. Note that annual contributions have been provided to the capital reserves in order to minimize the need for additional debt to finance the capital program. Also included are contributions to reserve funds.

5.2 Water Operating Revenues

The Township has base charges and miscellaneous revenue sources to help contribute towards operating expenditures. These miscellaneous revenues, including payment penalties and sale of water meters have been assumed to increase at a rate of 2.0% annually. Table 5-1 provides for the operating budget for the water system.

Table 5-1
Township of Guelph/Eramosa
Operating Budget Forecast – Water (inflated $)

Description	Forecast									
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Expenditures										
Operating Costs	-	-	-	-	-	-	-	-	-	-
Advertising	2,000	1,300	1,330	1,360	1,390	1,420	1,450	1,480	1,510	1,540
Communications	10,000	10,200	10,400	10,610	10,820	11,040	11,260	11,490	11,720	11,950
Conservation Initiatives	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Fees - Audit	4,000	4,000	4,000	4,000	4,000	4,080	4,160	4,240	4,320	4,410
Fees - Engineering	40,000	40,800	41,620	42,450	43,300	44,170	45,050	45,950	46,870	47,810
Fees - Legal	500	500	500	500	510	520	530	540	550	560
Fleet	12,000	15,000	15,300	15,610	15,920	16,240	16,560	16,890	17,230	17,570
Grounds Maintenance	2,000	2,000	2,000	2,000	2,000	2,500	2,500	2,500	2,500	2,500
Heating	2,000	2,040	2,080	2,120	2,160	2,200	2,240	2,280	2,330	2,380
Hydro	70,000	71,400	72,800	74,300	75,800	77,300	78,800	80,400	82,000	83,600
Insurance	46,720	47,650	48,600	49,570	50,560	51,570	52,600	53,650	54,720	55,810
Licenses	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Locates	500	500	500	500	500	500	500	500	500	500
Memberships and Dues	1,600	1,630	1,660	1,690	1,720	1,750	1,790	1,830	1,870	1,910
Meter Repairs	1,000	1,000	1,000	1,000	1,000	1,020	1,040	1,060	1,080	1,100
Contracted Services	52,000	53,040	54,100	55,180	56,280	57,410	58,560	59,730	60,920	62,140
Postage & Shipping	14,000	14,280	14,570	14,860	15,160	15,460	15,770	16,090	16,410	16,740
Property Taxes	8,422	8,590	8,762	8,937	9,116	9,299	9,480	9,670	9,860	10,060
Repairs & Maint - Buildings	6,000	6,000	6,000	6,000	6,000	6,120	6,240	6,360	6,490	6,620
Repairs & Maint - Equipment	32,000	32,640	33,290	33,960	34,640	35,330	36,040	36,760	37,500	38,250
Repairs & Maint - Water/WW Mains	31,000	31,000	31,620	32,250	32,900	33,560	34,230	34,910	35,610	36,320
Safety	3,000	3,000	3,000	3,000	3,000	3,060	3,120	3,180	3,240	3,300
Salaries and Wages	408,000	417,000	434,000	451,000	460,020	469,220	478,600	488,170	497,930	507,890
Salaries Benefits	131,000	134,000	139,000	145,000	147,900	150,860	153,880	156,960	160,100	163,300
Seminars & Training	12,000	12,000	12,000	10,000	10,200	10,404	10,612	10,824	11,041	11,262
Service Agreements	6,000	6,120	6,240	6,360	6,490	6,620	6,750	6,890	7,030	7,170
Supplies and Services	60,000	61,200	62,400	63,600	64,900	66,200	67,500	68,900	70,300	71,700
Telephone	3,200	3,260	3,330	3,400	3,470	3,540	3,610	3,680	3,750	3,830
Uniforms	2,500	2,800	2,860	2,920	2,980	3,040	3,100	3,160	3,220	3,280
Water Meter Stock	24,400	15,400	13,000	10,000	25,000	10,200	10,400	10,600	10,800	11,000
Transfer to Operating Reserve	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Indirect Costs Transfer	16,240	18,700	21,100	23,500	25,900	28,350	28,920	29,500	30,090	30,690
Sub Total Operating	**1,014,082**	**1,029,050**	**1,059,062**	**1,087,677**	**1,125,636**	**1,134,983**	**1,157,292**	**1,180,194**	**1,203,491**	**1,227,192**

Table 5-1 (Cont'd)
Township of Guelph/Eramosa
Operating Budget Forecast – Water (inflated $)

Description	Forecast									
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
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	43,128	43,128	43,128	43,128	43,128	43,128	43,128	43,128	43,128	43,128
Existing Debt (Interest) - Non-Growth Related										
New Non-Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Transfer to Capital	-	-	-	-	-	-	-	-	-	-
Transfer to D.C. Reserve Fund (from Wastewater D.C. Reserve Fund)										
Transfer to Wastewater D.C. Reserve Fund (from Water D.C. Reserve Fund)	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003
Transfer to Capital Reserve	125,327	147,934	150,766	153,671	178,268	201,496	210,971	220,826	229,616	238,249
Sub Total Capital Related	**227,458**	**250,065**	**252,897**	**255,802**	**280,399**	**303,627**	**313,102**	**322,957**	**331,747**	**340,380**
Total Expenditures	**1,241,540**	**1,279,115**	**1,311,959**	**1,343,479**	**1,406,035**	**1,438,610**	**1,470,394**	**1,503,151**	**1,535,238**	**1,567,572**
Revenues										
Base Charge	315,745	336,399	355,323	374,037	397,047	421,249	442,312	464,619	487,850	512,243
Penalty and Interest	9,700	9,900	10,100	10,300	10,500	10,700	10,900	11,100	11,300	11,500
Miscellaneous Revenue	15,300	15,600	15,900	16,200	16,500	16,800	17,100	17,400	17,700	18,100
Water Meters	14,400	5,400	3,000	-	15,000	-	-	-	-	-
Transfer from Reserves										
Transfer from Development Charge Reserves										
Contributions from Wastewater D.C. Reserve Fund (interim loan from Wastewater D.C. Reserve Fund)	-	-	-	-	-	-	-	-	-	-
Contributions from Water D.C. Reserve Fund	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003
Contributions from Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**414,148**	**426,302**	**443,327**	**459,540**	**498,050**	**507,752**	**529,315**	**552,122**	**575,853**	**600,846**
Water Billing Recovery - Operating	**827,392**	**852,813**	**868,632**	**883,940**	**907,985**	**930,858**	**941,079**	**951,029**	**959,385**	**966,726**
Lifecycle Reserve Contribution ($)	221,318	248,757	278,764	306,955	338,550	373,157	409,124	447,945	489,391	533,761
Water Billing Recovery - Total	**1,048,710**	**1,101,570**	**1,147,397**	**1,190,895**	**1,246,535**	**1,304,015**	**1,350,204**	**1,398,974**	**1,448,776**	**1,500,487**

5.3 Wastewater Operating Expenditures

The wastewater operating expenditures have been provided by staff. Generally, they have been adjusted over the forecast period by an annual inflationary factor of 2.0%, however, in certain instances, staff have provided variations in the costs based on a direct review of each item. Also included are contributions to the capital, lifecycle and operating reserve funds/reserves.

5.4 Wastewater Operating Revenues

The operating revenue for the wastewater program comes mainly from base charges along with volumetric revenue from customers. A small amount of revenue is also generated from miscellaneous sources and penalty and interest fees. Table 5-2 outlines the operating budget for the Guelph/Eramosa wastewater system.

Table 5-2
Township of Guelph/Eramosa
Operating Budget Forecast – Wastewater (inflated $)

Description	Forecast									
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Expenditures										
Operating Costs										
Communications	4,200	4,280	4,370	4,460	4,550	4,640	4,730	4,820	4,920	5,020
Conservation Initiatives	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Fees - Engineering	11,000	11,220	11,440	11,670	11,900	12,140	12,380	12,630	12,880	13,140
Fees - Legal	500	500	500	500	500	500	500	500	500	500
Fleet	5,000	5,500	5,610	5,720	5,830	5,950	6,070	6,190	6,310	6,440
Grounds Maintenance	2,000	2,000	2,000	2,000	2,000	2,500	2,500	2,500	2,500	2,500
Heating	1,000	1,020	1,040	1,060	1,080	1,100	1,120	1,140	1,160	1,180
Hydro	46,000	46,920	47,860	48,820	49,800	50,800	51,820	52,860	53,920	55,000
Insurance	30,740	32,580	34,530	36,600	38,800	41,130	43,600	46,220	48,990	51,930
Licenses	500	500	500	500	500	500	500	500	500	500
Memberships and Dues	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Contracted Services	3,500	3,500	3,570	3,640	3,710	3,780	3,860	3,940	4,020	4,100
Property Taxes	6,996	7,136	7,279	7,424	7,573	7,724	7,880	8,040	8,200	8,360
Repairs & Maint - Building	4,000	4,000	4,080	4,160	4,240	4,320	4,410	4,500	4,590	4,680
Repairs & Maint - Equipment	33,000	30,000	30,600	31,210	31,830	32,470	33,120	33,780	34,460	35,150
Repairs & Maint - Water/WW Mains	30,000	30,000	30,600	31,210	31,830	32,470	33,120	33,780	34,460	35,150
Safety	1,500	1,500	1,500	1,500	1,530	1,560	1,590	1,620	1,650	1,680
Salaries and Wages	204,000	209,000	217,000	226,000	230,520	235,130	239,830	244,630	249,520	254,510
Salaries Benefits	66,000	67,000	70,000	73,000	74,460	75,950	77,470	79,020	80,600	82,210
Seminars and Training	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Service Agreements	1,000	1,000	1,020	1,040	1,060	1,080	1,100	1,120	1,140	1,160
Supplies and Services	55,000	56,100	57,200	58,300	59,500	60,700	61,900	63,100	64,400	65,700
Uniforms	700	750	770	790	810	830	850	870	890	910
W/W Treatment City of Guelph	550,000	566,500	583,500	601,010	619,040	637,610	656,740	676,440	696,730	717,630
Indirect Costs Transfer	16,450	17,350	18,242	19,130	20,025	20,910	21,330	21,760	22,200	22,640
Sub Total Operating	**1,079,086**	**1,104,356**	**1,139,211**	**1,175,744**	**1,207,088**	**1,239,794**	**1,272,420**	**1,305,960**	**1,340,540**	**1,376,090**

Figure 5-2 (Cont'd)
Township of Guelph/Eramosa
Operating Budget Forecast – Wastewater (inflated $)

Description	Forecast									
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Capital-Related										
Existing Debt (Principal) - Growth Related	138,000	140,000	144,000	146,000	150,000	1,836,000	-	-	-	-
Existing Debt (Interest) - Growth Related	59,248	56,971	54,451	51,571	48,432	44,982	-	-	-	-
New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Existing Debt (Principal) - Non-Growth Related										
Existing Debt (Interest) - Non-Growth Related										
New Non-Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Transfer to Capital	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	176,524	204,149	208,208	205,693	224,253	245,859	248,153	249,663	250,266	250,036
Transfer to Rockwood Water D.C. Reserve										
Transfer to Wastewater D.C. Reserve Fund	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003
Transfer to Rockwood Wastewater Lifecycle Reserve (Loan Repayment)										
Sub Total Capital Related	**432,775**	**460,123**	**465,662**	**462,267**	**481,688**	**2,185,844**	**307,156**	**308,666**	**309,270**	**309,039**
Total Expenditures	**1,511,861**	**1,564,479**	**1,604,872**	**1,638,011**	**1,688,776**	**3,425,638**	**1,579,576**	**1,614,626**	**1,649,810**	**1,685,129**
Revenues										
Base Charge	276,396	286,246	293,625	300,200	309,788	319,639	326,032	332,552	339,203	345,987
Penalty and Interest	4,828	4,924	5,023	5,123	5,226	5,330	5,437	5,545	5,656	5,770
Miscellaneous Revenue	1,530	1,561	1,592	1,624	1,656	1,689	1,723	1,757	1,793	1,828
Contributions from DC Reserve Fund	197,248	196,971	198,451	197,571	198,432	1,880,982	-	-	-	-
Contributions from Capital Reserve Fund										
Contributions from Lifecycle Reserve Fund										
Contributions from Contingency Reserve Fund										
Contributions from Water D.C. Reserve Fund	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003
Contributions from Wastewater D.C. Reserve Fund (interim loan from Wastewater D.C. Reserve Fund)										
Total Operating Revenue	**539,004**	**548,705**	**557,693**	**563,521**	**574,104**	**2,266,643**	**392,195**	**398,858**	**405,655**	**412,589**
Wastewater Billing Recovery - Operating	**972,857**	**1,015,774**	**1,047,179**	**1,074,491**	**1,114,671**	**1,158,995**	**1,187,381**	**1,215,768**	**1,244,154**	**1,272,540**
Lifecycle Reserve Contribution ($)	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Wastewater Billing Recovery - Total	**1,172,857**	**1,215,774**	**1,247,179**	**1,274,491**	**1,314,671**	**1,358,995**	**1,387,381**	**1,415,768**	**1,444,154**	**1,472,540**

5.5 Gazer-Mooney Water & Wastewater Operating Budget

As the City of Guelph provides service to the area of Gazer-Mooney, the only operating expenditure for this system is a hydro cost paid to the City of Guelph which is subsequently remitted back to the Township. This entry has been adjusted over the forecast period by an annual inflationary factor of 5.0%. Also included are contributions to the lifecycle reserve.

Table 5-2
Township of Guelph/Eramosa
Operating Budget Forecast – Gazer-Mooney Water & Wastewater (inflated $)

Description	Forecast									
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Expenditures										
Operating Costs	-	-	-	-	-	-	-	-	-	-
Hydro	3,675	3,859	4,052	4,254	4,467	4,690	4,925	5,171	5,430	5,701
Sub Total Operating	**3,675**	**3,859**	**4,052**	**4,254**	**4,467**	**4,690**	**4,925**	**5,171**	**5,430**	**5,701**
Capital-Related										
Existing Debt (Principal) - Non-Growth Related										
Existing Debt (Interest) - Non-Growth Related										
New Non-Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Sub Total Capital Related	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total Expenditures	**3,675**	**3,859**	**4,052**	**4,254**	**4,467**	**4,690**	**4,925**	**5,171**	**5,430**	**5,701**
Revenues										
Miscellaneous Revenue	3,675	3,859	4,052	4,254	4,467	4,690	4,925	5,171	5,430	5,701
Total Operating Revenue	**3,675**	**3,859**	**4,052**	**4,254**	**4,467**	**4,690**	**4,925**	**5,171**	**5,430**	**5,701**
Water Billing Recovery - Operating	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Lifecycle Reserve Contribution ($)	23,883	24,360	24,848	25,345	25,852	26,369	26,896	27,434	27,983	28,543
Water Billing Recovery - Total	**23,883**	**24,360**	**24,848**	**25,345**	**25,852**	**26,369**	**26,896**	**27,434**	**27,983**	**28,543**

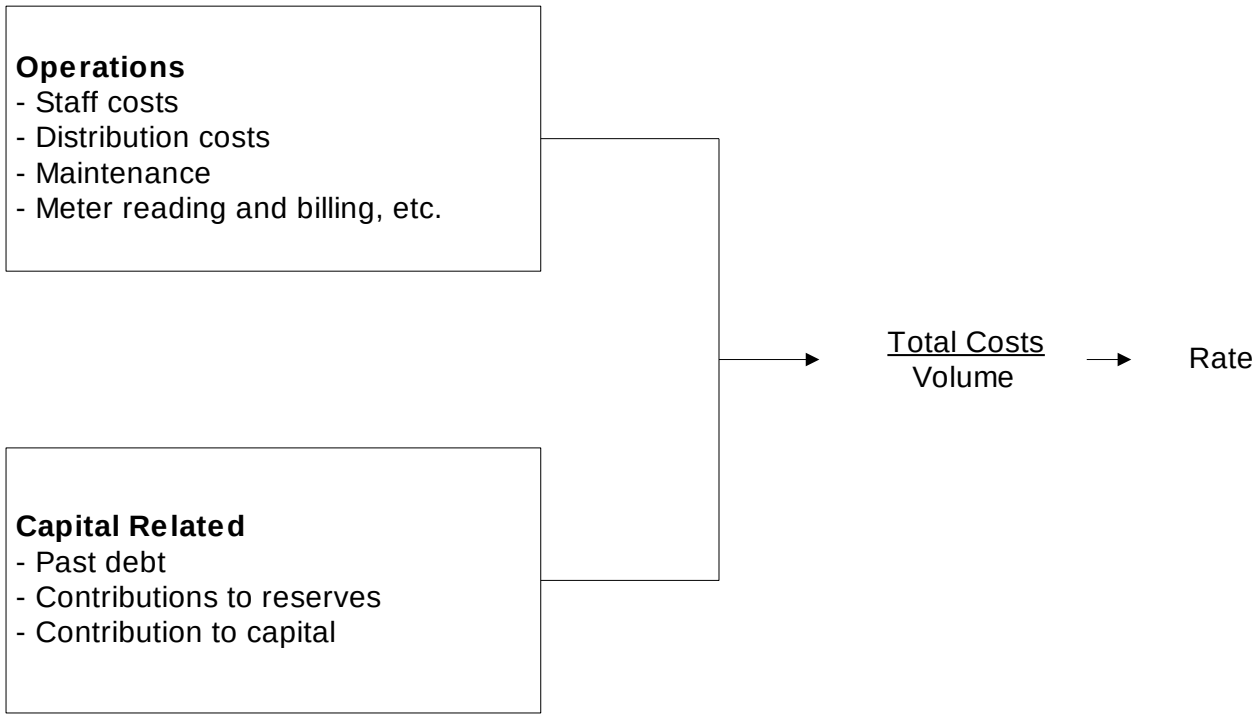
Chapter 6
Pricing Structures

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 five basic rate structures employed along with other variations:

- Flat Rate (non-metered customers);
- Constant Rate;
- Declining Block Rate;
- Increasing (or Inverted) Block Rate;
- Hump Back Block Rate; and
- 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.

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

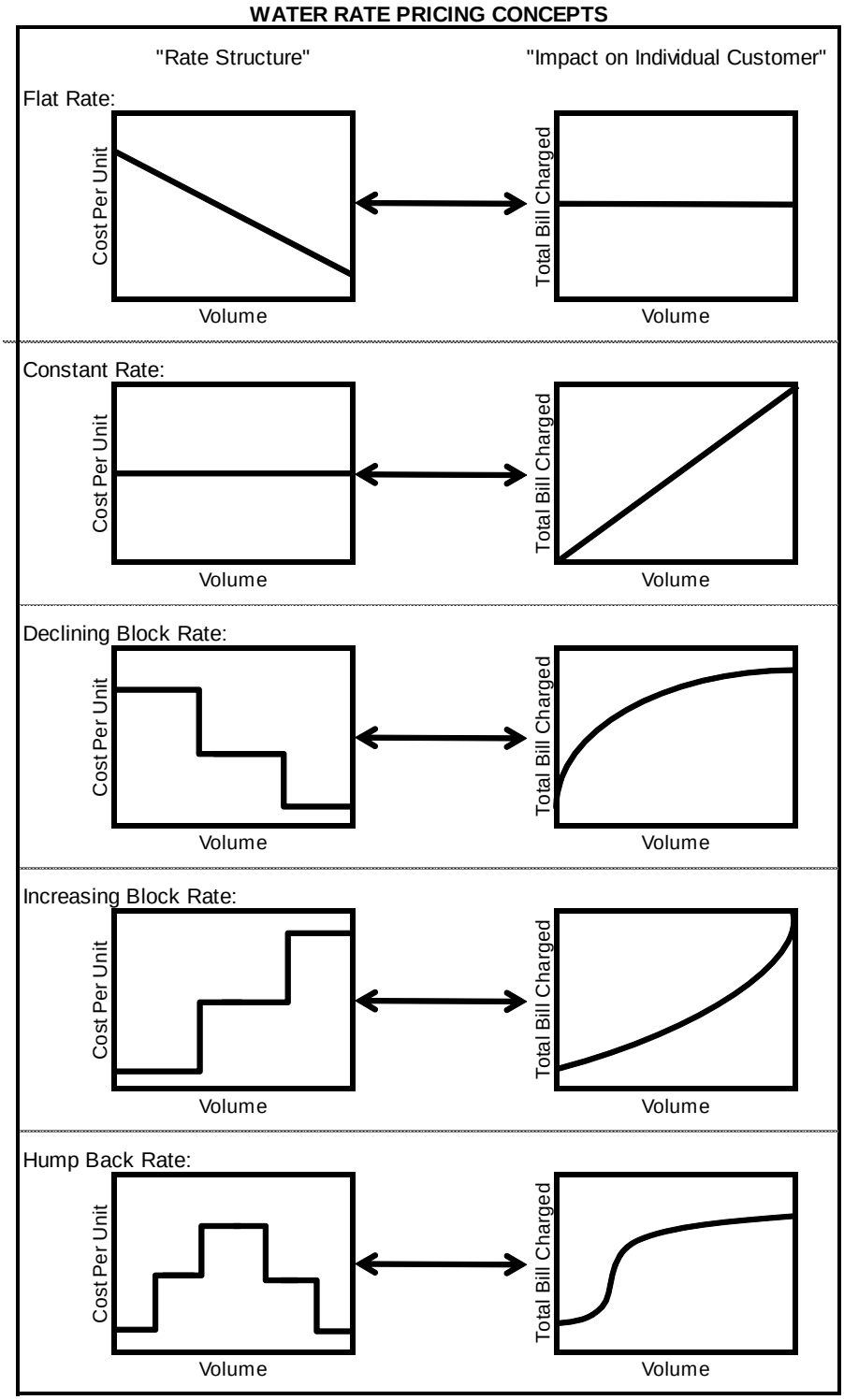
pricing range. Similarly, those whose consumption level is at the top end of a block have less incentive to reduce consumption.

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 6-1 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


WATER RATE PRICING CONCEPTS
"Rate Structure"
"Impact on Individual Customer"
Flat Rate:
Cost Per Unit
Volume
Total Bill Charged
Volume
Constant Rate:
Cost Per Unit
Volume
Total Bill Charged
Volume
Declining Block Rate:
Cost Per Unit
Volume
Total Bill Charged
Volume
Increasing Block Rate:
Cost Per Unit
Volume
Total Bill Charged
Volume
Hump Back Rate:
Cost Per Unit
Volume
Total Bill Charged
Volume

RATE STRUCTURE	COST PER UNIT AS VOLUME CONSUMPTION INCREASES	IMPACT ON CUSTOMER BILL AS VOLUME CONSUMPTION 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 increases
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	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 Recommended Rate Structures

Based on the foregoing, it is recommended that the same base charge and volume rate structures be continued in the future for both water and wastewater. The flat rate for the Gazer-Mooney area is also recommended to be continued.

As noted earlier, the needs for water are balanced throughout the forecast period whereas the needs for wastewater are arising in the middle of the forecast period. As the infrastructure in the Township ages, additional lifecycle costs are growing throughout the forecast period.

In order to meet the future lifecycle needs for water, it is recommended that the water base charges increase monthly by $0.54 in the early part of the forecast, increasing to $0.84 in the latter part of the forecast. The forecast base charges are presented in Table 6-2.

As for wastewater, it is recommended that wastewater base charges increase monthly by $0.22 and $0.26 over the forecast period. Keeping the wastewater rate increases low helps to keep the overall combined water and wastewater bill increases lower, as there are more significant needs in the water system. The forecast base charges are presented in Table 6-3.

For water and wastewater customers within the Gazer-Mooney area, the annual flat rate is forecasted to increase between $6.60 and $7.88 over the forecast period to ensure the lifecycle reserve has an adequate balance to fund the replacement of infrastructure within the forecast period.

The above increases are recommended to ensure that the Township can fund the capital and operating costs without the need for debentures. The forecast base charges and corresponding revenue are provided in Tables 6-2, 6-3 and 6-4.

Table 6-2
Township of Guelph/Eramosa
Base Charge Forecast – Water

Water	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	2,255	2,255	2,255	2,255	2,255	2,255	2,255	2,255	2,255	2,255	2,255
New	18	61	95	109	115	141	166	166	167	167	167
Subtotal Customers	**2,273**	**2,316**	**2,350**	**2,364**	**2,370**	**2,396**	**2,421**	**2,421**	**2,422**	**2,422**	**2,422**
Monthly Base Charge	$10.82	$11.36	$11.93	$12.53	$13.15	$13.81	$14.50	$15.22	$15.99	$16.79	$17.62
Annual Base Charge	$129.84	$136.33	$143.15	$150.31	$157.82	$165.71	$174.00	$182.70	$191.83	$201.42	$211.50
Total Annual Revenue	**$295,126**	**$315,745**	**$336,399**	**$355,323**	**$374,037**	**$397,047**	**$421,249**	**$442,312**	**$464,619**	**$487,850**	**$512,243**

Table 6-3
Township of Guelph/Eramosa
Base Charge Forecast – Wastewater

Wastewater	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing	2,027	2,027	2,027	2,027	2,027	2,027	2,027	2,027	2,027	2,027	2,027
New	18	60	92	104	109	134	159	159	159	159	159
Subtotal Customers	**2,045**	**2,087**	**2,119**	**2,131**	**2,136**	**2,161**	**2,186**	**2,186**	**2,186**	**2,186**	**2,186**
Monthly Base Charge	$10.82	$11.04	$11.26	$11.48	$11.71	$11.95	$12.19	$12.43	$12.68	$12.93	$13.19
Annual Base Charge	$129.84	$132.44	$135.09	$137.79	$140.54	$143.35	$146.22	$149.15	$152.13	$155.17	$158.27
Total Annual Revenue	**$265,523**	**$276,396**	**$286,246**	**$293,625**	**$300,200**	**$309,788**	**$319,639**	**$326,032**	**$332,552**	**$339,203**	**$345,987**

Table 6-4
Township of Guelph/Eramosa
Flat Rate Forecast – Gazer-Mooney Water & Wastewater

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Annual Flat Rate - Water & Wastewater	329.78	336.38	343.10	349.97	356.97	364.11	371.39	378.82	386.40	394.13	402.01
Total Annual Bill	**329.78**	**336.38**	**343.10**	**349.97**	**356.97**	**364.11**	**371.39**	**378.82**	**386.40**	**394.13**	**402.01**

Chapter 7
Analysis of Water and Wastewater Rates and Policy Matters

7. Analysis of Water and Wastewater Rates and Policy Matters

7.1 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. The base charge revenues are to ensure that fixed costs are recovered regardless of the amount of volume used by customers. This chapter will provide for the calculation of the volume 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 water consumption forecast and wastewater volumes provided in section 1.8.

7.2 Water Rates

Based on the discussion of rate structures provided in section 6.5 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 base charge amounts provided in section 6.5) and completes the calculation by dividing them by the volumes resulting in the forecasted rates. Historically, Rockwood and Hamilton Drive has separate water rates. Previously, the Township combined the operating rates, however, the capital recovery was calculated separately for each system. Based on discussions with staff, this study has been prepared to move towards merging the rates so that each pay an equal rate. This will be implemented over approximately 10 years.

The volume rates for Rockwood are anticipated to increase annually between $0.10 to $0.14 over the forecast period. The volume rates for Hamilton drive are anticipated to increase between $0.03 to $0.04 per year. The volume rates are presented in Table 7-1 for Rockwood and Table 7-2 for Hamilton Drive. Detailed calculations of the volume rates are provided in Appendix E. A summary of the recommended base charge and

volume rates along with the total annual bill for an average residential user (170 cu.m in Rockwood and 220 cu.m in the Hamilton Drive area) per year are as follows:

Table 7-1
Township of Guelph/Eramosa
Average Annual Residential Water Bill – Rockwood
(Based on an Annual usage of 170 cu.m)

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Monthly Base Rate	$10.82	$11.36	$11.93	$12.53	$13.15	$13.81	$14.50	$15.22	$15.99	$16.79	$17.62
Constant Rate	2.52	2.62	2.72	2.83	2.94	3.06	3.18	3.30	3.43	3.57	3.71
Annual Base Rate Bill	**$129.84**	**$136.33**	**$143.15**	**$150.31**	**$157.82**	**$165.71**	**$174.00**	**$182.70**	**$191.83**	**$201.42**	**$211.50**
Volume	170	170	170	170	170	170	170	170	170	170	170
Annual Volume Bill	**$428.40**	**$445.28**	**$462.82**	**$481.06**	**$500.01**	**$519.71**	**$540.19**	**$561.47**	**$583.59**	**$606.59**	**$630.49**
Total Annual Bill	**$558.24**	**$581.61**	**$605.97**	**$631.36**	**$657.83**	**$685.42**	**$714.19**	**$744.17**	**$775.43**	**$808.01**	**$841.98**
Dollar Increase - Base Rate		**$0.54**	**$0.57**	**$0.60**	**$0.63**	**$0.66**	**$0.69**	**$0.72**	**$0.76**	**$0.80**	**$0.84**
Dollar Increase - Volume Rate		**$0.10**	**$0.10**	**$0.11**	**$0.11**	**$0.12**	**$0.12**	**$0.13**	**$0.13**	**$0.14**	**$0.14**
Dollar Increase - Total Annual Bill		**$23.37**	**$24.36**	**$25.39**	**$26.47**	**$27.59**	**$28.76**	**$29.98**	**$31.26**	**$32.59**	**$33.97**

Table 7-2
Township of Guelph/Eramosa
Average Annual Residential Water Bill – Hamilton Drive
(Based on an Annual usage of 170 cu.m and 220 cu.m)

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Monthly Base Rate	$10.82	$11.36	$11.93	$12.53	$13.15	$13.81	$14.50	$15.22	$15.99	$16.79	$17.62
Constant Rate	3.42	3.45	3.49	3.52	3.56	3.59	3.63	3.67	3.70	3.74	3.78
Annual Base Rate Bill	**$129.84**	**$136.33**	**$143.15**	**$150.31**	**$157.82**	**$165.71**	**$174.00**	**$182.70**	**$191.83**	**$201.42**	**$211.50**
Volume	170	170	170	170	170	170	170	170	170	170	170
Annual Volume Bill	**$581.40**	**$587.21**	**$593.09**	**$599.02**	**$605.01**	**$611.06**	**$617.17**	**$623.34**	**$629.57**	**$635.87**	**$642.23**
Total Annual Bill	**$711.24**	**$723.55**	**$736.23**	**$749.32**	**$762.83**	**$776.77**	**$791.17**	**$806.04**	**$821.41**	**$837.29**	**$853.72**
Dollar Increase - Total Annual Bill		**$12.31**	**$12.69**	**$13.09**	**$13.51**	**$13.94**	**$14.40**	**$14.87**	**$15.37**	**$15.89**	**$16.43**
Additional 50 cu.m of volume to reflect higher consumption in this area (220 cu.m per average customer)											
Additional Volume	50	50	50	50	50	50	50	50	50	50	50
Constant Rate	3.42	3.45	3.49	3.52	3.56	3.59	3.63	3.67	3.70	3.74	3.78
Additional Water Bill	$171.00	$172.71	$174.44	$176.18	$177.94	$179.72	$181.52	$183.34	$185.17	$187.02	$188.89
Total Annual Water Bill	**$882.24**	**$896.26**	**$910.67**	**$925.50**	**$940.77**	**$956.49**	**$972.69**	**$989.37**	**$1,006.57**	**$1,024.31**	**$1,042.61**
Dollar Increase - Total Annual Bill		**$14.02**	**$14.42**	**$14.83**	**$15.27**	**$15.72**	**$16.19**	**$16.69**	**$17.20**	**$17.74**	**$18.30**

7.3 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 volumes, resulting in the forecast rates. Detailed calculations are provided in Appendix F. As mentioned in Chapter 6, the bulk of the wastewater needs are required in the middle half of the capital forecast.

Based on the timing of the capital needs, coupled with the rising lifecycle costs to replace existing infrastructure, the wastewater volume rates are anticipated to increase by $0.07 per year for 2021 to 2025 and $0.08 per year from 2026 to 2030.

The following summarizes the recommended rates for wastewater and provides the average annual bill for a residential customer who uses 170 cu.m per year:

Table 7-3
Township of Guelph/Eramosa
Average Annual Residential Wastewater Bill (Based on an Annual Usage of 170 cu.m)

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Monthly Base Rate	$10.82	$11.04	$11.26	$11.48	$11.71	$11.95	$12.19	$12.43	$12.68	$12.93	$13.19
Constant Rate	$3.40	$3.47	$3.54	$3.61	$3.68	$3.75	$3.83	$3.91	$3.99	$4.07	$4.15
Annual Base Rate Bill	**$129.84**	**$132.44**	**$135.09**	**$137.79**	**$140.54**	**$143.35**	**$146.22**	**$149.15**	**$152.13**	**$155.17**	**$158.27**
Volume	170	170	170	170	170	170	170	170	170	170	170
Annual Volume Bill	**$577.99**	**$589.90**	**$601.80**	**$613.70**	**$625.60**	**$637.50**	**$651.10**	**$664.70**	**$678.30**	**$691.90**	**$705.50**
Total Annual Bill	**$707.83**	**$722.34**	**$736.89**	**$751.49**	**$766.14**	**$780.85**	**$797.32**	**$813.85**	**$830.43**	**$847.07**	**$863.77**
Dollar Increase - Base Rate		**$0.22**	**$0.22**	**$0.23**	**$0.23**	**$0.23**	**$0.24**	**$0.24**	**$0.25**	**$0.25**	**$0.26**
Dollar Increase - Volume Rate		**$0.07**	**$0.07**	**$0.07**	**$0.07**	**$0.07**	**$0.08**	**$0.08**	**$0.08**	**$0.08**	**$0.08**
Dollar Increase - Total Annual Bill		**$14.51**	**$14.55**	**$14.60**	**$14.66**	**$14.71**	**$16.47**	**$16.52**	**$16.58**	**$16.64**	**$16.70**

7.4 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 base charge and volume rate charges for the Rockwood area results in an increase of $37.88 to the total annual bill for residential customers in 2021. Table 7-4 presents the forecast combined annual bill for customers in Rockwood.

Table 7-4
Township of Guelph/Eramosa
Average Annual Residential Water and Wastewater Bill – Rockwood (Based on an annual useage of 170 cu.m)

Description	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Water											
Monthly Base Rate	$10.82	$11.36	$11.93	$12.53	$13.15	$13.81	$14.50	$15.22	$15.99	$16.79	$17.62
Constant Rate	2.52	2.62	2.72	2.83	2.94	3.06	3.18	3.30	3.43	3.57	3.71
Annual Base Rate Bill	**$129.84**	**$136.33**	**$143.15**	**$150.31**	**$157.82**	**$165.71**	**$174.00**	**$182.70**	**$191.83**	**$201.42**	**$211.50**
Annual Volume Bill	**$428.40**	**$445.28**	**$462.82**	**$481.06**	**$500.01**	**$519.71**	**$540.19**	**$561.47**	**$583.59**	**$606.59**	**$630.49**
Total Water Bill	**$558.24**	**$581.61**	**$605.97**	**$631.36**	**$657.83**	**$685.42**	**$714.19**	**$744.17**	**$775.43**	**$808.01**	**$841.98**
Wastewater											
Monthly Base Rate	$10.82	$11.04	$11.26	$11.48	$11.71	$11.95	$12.19	$12.43	$12.68	$12.93	$13.19
Constant Rate	3.40	3.47	3.54	3.61	3.68	3.75	3.83	3.91	3.99	4.07	4.15
Annual Base Rate Bill	**$129.84**	**$132.44**	**$135.09**	**$137.79**	**$140.54**	**$143.35**	**$146.22**	**$149.15**	**$152.13**	**$155.17**	**$158.27**
Annual Volume Bill	**$577.99**	**$589.90**	**$601.80**	**$613.70**	**$625.60**	**$637.50**	**$651.10**	**$664.70**	**$678.30**	**$691.90**	**$705.50**
Total Wastewater Bill	**$707.83**	**$722.34**	**$736.89**	**$751.49**	**$766.14**	**$780.85**	**$797.32**	**$813.85**	**$830.43**	**$847.07**	**$863.77**
Total Water and Wastewater Bill	**$1,266.07**	**$1,303.95**	**$1,342.86**	**$1,382.85**	**$1,423.98**	**$1,466.28**	**$1,511.51**	**$1,558.02**	**$1,605.86**	**$1,655.08**	**$1,705.76**
Dollar Increase - Total Annual Bill		**$37.88**	**$38.91**	**$39.99**	**$41.12**	**$42.30**	**$45.23**	**$46.51**	**$47.84**	**$49.23**	**$50.67**

Chapter 8
Recommendations

8. Recommendations

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

Based upon the foregoing, the following recommendations are identified for consideration by Township 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, 2-2 and 2-3 and the associated Capital Financing Plan as set out in Tables 4-1, 4-2 and 4-3.

3. That Council consider the base charges provided in Table 6-1 for water, Table 6-2 for wastewater and Table 6-3 for the flat rate in Gazer-Mooney for water and wastewater.

4. That Council consider the volume rates for water and wastewater as provided in Tables 7-1, 7-2 and 7-3 respectively.

Appendices

Appendix A
Water System – Rockwood
Inventory Data

Appendix A: Water System – Rockwood Inventory Data

Table A-1
Township of Guelph/Eramosa
Rockwood Water Facilities

Item	In-Service Date	Estimated Life	Replacement Year	Replacement Cost (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast	Future Value
STATION STREET PUMPHOUSE								
- Station Street Well #1 and Well #2	1976	75	2051	540,710	31	23,573	-	999,010
- Well Pumps	1976	15	2020	23,510	0	suggested for 10 year capital forecast	23,510	23,510
- Well Piping	1976	25	2020	23,510	0	suggested for 10 year capital forecast	23,510	23,510
Station Street Pumphouse	1976							-
- Building	1976	100	2076	470,190	56	14,034	-	1,425,224
- Roof	2006	20	2026	14,110	6	suggested for 10 year capital forecast	14,110	15,890
- Pumps	2006	15	2021	17,630	1	suggested for 10 year capital forecast	17,630	17,983
- Treatment and Process Piping	2006	25	2031	96,390	11	9,849	-	119,849
- UV Disinfection	2006	12	2023	58,770	3	suggested for 10 year capital forecast	58,770	62,367
- Electrical Power and Generator	2006	25	2031	235,090	11	24,021	-	292,305
- Instrumentation and Controls	2006	20	2026	117,550	6	suggested for 10 year capital forecast	117,550	132,380

Item	In-Service Date	Estimated Life	Replacement Year	Replacement Cost (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast	Future Value
BERNARDI PUMPHOUSE								
Bernardi Well #3								-
- Well #3	2004	50	2054	223,340	34	9,116	-	437,897
- Well Pumps	2004	15	2025	14,110	5	suggested for 10 year capital forecast	14,110	15,579
- Well Piping	2004	19	2025	11,750	5	suggested for 10 year capital forecast	11,750	12,973
Bernardi Pumphouse								-
- Building	2004	100	2104	282,110	84	6,961	-	1,488,788
- Roof	2004	25	2029	35,260	9	suggested for 10 year capital forecast	35,260	42,139
- Pumps	2004	22	2025	28,210	5	suggested for 10 year capital forecast	28,210	31,146
- Treatment and Process Piping	2004	25	2029	88,160	9	suggested for 10 year capital forecast	88,160	105,359
- Electrical Power and Generator	2004	25	2029	176,320	9	suggested for 10 year capital forecast	176,320	210,719
- Instrumentation and Controls	2004	20	2024	47,020	4	suggested for 10 year capital forecast	47,020	50,896

Item	In-Service Date	Estimated Life	Replacement Year	Replacement Cost (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
STANDPIPE AND BOOSTER PUMPING STATION							
Booster Pumping Station							
- Building	2008	100	2108	739,370	88	17,925	-
- Roof	2008	15	2023	23,510	3	suggested for 10 year capital forecast	23,510
- Pumps	2008	12	2020	23,510	0	suggested for 10 year capital forecast	23,510
- Chemical Feed	2008	15	2023	64,650	3	suggested for 10 year capital forecast	64,650
- Controls	2008	15	2023	123,420	3	suggested for 10 year capital forecast	123,420
- Electrical Power and Generator	2008	25	2033	199,830	13	17,609	-
- Yard Piping	2008	75	2083	76,410	63	2,144	-
- Standpipe	2008	25	2033	1,463,450	13	128,957	-
Alma Operations Centre - new in 2017							
- structure	2017	100	2117	235,090	97	5,509	-
- shell	2017	95	2112	235,090	92	5,609	-
- roof	2017	40	2057	35,260	37	1,358	-
- interior	2017	35	2052	23,510	32	1,002	-
- HVAC	2017	25	2042	29,390	22	1,664	-
- other	2017	25	2042	23,510	22	1,331	-
- Furnishings and finishes	2017	25	2042	23,510	22	1,331	-

Item	In-Service Date	Estimated Life	Replacement Year	Replacement Cost (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
MILNE PUMPHOUSE - NEW in 2020							
Milne Well #4	2020	75	2095	235,090	75	6,078	-
- pumps and piping	2020	25	2045	47,020	25	2,408	-
- Milne Pumphouse							
- Building	2020	75	2095	160,000	75	4,137	-
- Roof	2020	40	2060	20,000	40	731	-
- wet well	2020	100	2120	250,000	100	5,801	-
- Pumps	2020	15	2035	12,000	15	934	-
- Treatment and Process Piping	2020	25	2045	120,000	25	6,146	-
- Electrical Power and Generator	2020	25	2045	120,000	25	6,146	-
- Instrumentation and Controls	2020	25	2045	280,000	25	14,342	-
SCADA system RPU & HMI upgrades	2009	5	2020	16,630	0	suggested for 10 year capital forecast	16,630
Total				**7,083,990**		**318,717**	**907,630**

Table A-2
Township of Guelph/Eramosa
Rockwood Water Meters

Year Installed	Number of Meters	Estimated Life	Replacement Year	Historical Cost	Replacement Cost per Unit (2020$)	Replacement Cost (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
1985	35	30	2020	1,279	300	10,500	0	suggested for 10 year capital forecast	10,500
1986	35	30	2020	1,358	300	10,500	0	suggested for 10 year capital forecast	10,500
1987	25	30	2020	1,078	300	7,500	0	suggested for 10 year capital forecast	7,500
1988	25	30	2020	1,162	300	7,500	0	suggested for 10 year capital forecast	7,500
1989	35	30	2020	1,733	300	10,500	0	suggested for 10 year capital forecast	10,500
1990	70	30	2020	3,553	300	21,000	0	suggested for 10 year capital forecast	21,000
1991	60	30	2021	2,913	300	18,000	1	suggested for 10 year capital forecast	18,000
1992	25	30	2022	1,208	300	7,500	2	suggested for 10 year capital forecast	7,500
1993	25	30	2023	1,216	300	7,500	3	suggested for 10 year capital forecast	7,500

Year Installed	Number of Meters	Estimated Life	Replacement Year	Historical Cost	Replacement Cost per Unit (2020$)	Replacement Cost (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
1994	25	30	2024	1,248	300	7,500	4	suggested for 10 year capital forecast	7,500
1995	25	30	2025	1,286	300	7,500	5	suggested for 10 year capital forecast	7,500
1996	25	30	2026	1,311	300	7,500	6	suggested for 10 year capital forecast	7,500
1997	25	30	2027	1,338	300	7,500	7	suggested for 10 year capital forecast	7,500
1998	25	30	2028	1,363	300	7,500	8	suggested for 10 year capital forecast	7,500
1999	90	30	2029	5,026	300	27,000	9	suggested for 10 year capital forecast	27,000
2000	60	30	2030	3,610	300	18,000	10	suggested for 10 year capital forecast	18,000
2001	20	30	2031	1,256	300	6,000	11	613	-
2002	23	30	2032	1,470	300	6,900	12	652	-
2003	25	30	2033	1,658	300	7,500	13	661	-
2004	65	30	2034	4,593	300	19,500	14	1,611	-
2005	40	30	2035	2,976	300	12,000	15	934	-
2006	40	30	2036	3,176	300	12,000	16	884	-
2007	45	30	2037	3,813	300	13,500	17	945	-

Year Installed	Number of Meters	Estimated Life	Replacement Year	Historical Cost	Replacement Cost per Unit (2020$)	Replacement Cost (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
2008	4	30	2038	371	300	1,200	18	80	-
2009	16	30	2039	1,500	300	4,800	19	306	-
2010	18	30	2040	1,843	300	5,400	20	330	-
2011	37	30	2041	4,143	300	11,100	21	653	-
2012	66	30	2042	7,762	300	19,800	22	1,121	-
2013	47	30	2043	5,682	300	14,100	23	771	-
2014	77	30	2044	9,530	300	23,100	24	1,221	-
2015	227	30	2045	57,935	300	68,100	25	3,488	-
2016	232	30	2046	60,936	300	69,600	26	3,459	-
2017	99	30	2047	26,812	300	29,700	27	1,434	-
2018	117	30	2048	33,136	300	35,100	28	1,649	-
2019	228	30	2049	67,059	300	68,400	29	3,131	-
	2,036			**326,330**		**610,800**		**23,944**	**183,000**

Table A-3
Township of Guelph/Eramosa
Rockwood Water Hydrants

Location	Number of Hydrants	Year Installed	Accounting Year of Purchase	Accounting Historical Cost	Estimated Life	Replacement Year	Replacement Cost (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Original Rockwood Servicing (Alma , Rockwood North, Main St. S)	44	1975	1975	3,109	60	2035	196,540	15	15,296	-
Henry Street	10	1985	1985	3,022	60	2045	44,670	25	2,288	-
Parkedge	3	1987	1987	3,022	60	2047	13,400	27	647	-
Lou's	6	1989	1989	3,226	60	2049	26,800	29	1,227	-
Landrex and Alma Condo's	11	1990	1990	3,518	60	2050	49,130	30	2,194	-
Cobblestone	6	1992	1992	3,954	60	2052	26,800	32	1,142	-
Bernardi Crescent	3	1998	1998	4,515	60	2058	13,400	38	507	-
Rockwood Ridge Ph1 & Riverwalk	9	1999	1999	4,938	60	2059	40,200	39	1,494	-
Ridge Ph 2A	5	2001	2001	5,098	60	2061	22,330	41	803	-
Ridge Ph 2B, Mary/Fall and Firehall	5	2003	2003	5,247	60	2063	22,330	43	779	-
Ridge Ph 2C, Mill Run and Jolliffe	17	2004	2004	5,508	60	2064	75,930	44	2,611	-
Ridge Top	13	2006	2006	5,266	60	2066	58,070	46	1,943	-
Millview	2	2007	2007	5,849	60	2067	8,930	47	295	-
Noble Ridge	12	2014	2000	6,307	60	2074	53,600	54	1,632	-
Noble Ridge Condo	7	2015	2000	6,719	60	2075	31,270	55	943	-
Main Street North and Scared Heart School	3	2016	2017	6,888	60	2076	14,810	56	442	-
Alma Plant and Richardson	2	2017	2017	6,589	60	2077	10,810	57	320	-
Bonarrow and Rockmosa Drive	16	2018	2020	6,554	60	2078	94,040	58	2,754	-
Harris Street Reconstruction	6	2019	2019	6,598	60	2079	38,090	59	1,105	-
Total	**180**						**841,150**		**38,421**	**0**

Table A-4
Township of Guelph/Eramosa
Rockwood Watermains

Street	Asset ID	Length (m)	Diameter (mm)	Material	Year Installed	Estimated Life	Replacement Year	Main Replacement Costs (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Mackenzie Street	1227	158	150	PVC	1975	60	2035	68,990	15	5,369	-
Gzowski Street	1228	98	200	PVC	1975	60	2035	39,550	15	3,078	-
Brady Street	1229	159	150	PVC	1975	60	2035	64,180	15	4,995	-
Rockmosa Drive	1230	60	150	PVC	1975	60	2035	40,370	15	3,142	-
Queen Street	1231	186	150	PVC	1975	60	2035	75,080	15	5,843	-
Jackson Street	1232	99	150	PVC	1975	60	2035	39,970	15	3,111	-
Brady Street	1233	181	150	PVC	1975	60	2035	73,070	15	5,687	-
Jackson Street	1234	98	150	PVC	1975	60	2035	39,550	15	3,078	-
Frederick Street	1235	185	150	PVC	1975	60	2035	74,680	15	5,812	-
Jackson Street	1236	98	150	PVC	1975	60	2035	39,550	15	3,078	-
Main Street	1237	186	250	PVC2	2004	85	2089	75,080	69	2,016	-
Rockmosa Drive	1238	200	200	PVC2	2018	85	2103	131,650	83	3,264	-
Main Street	1239	157	200	PVC	1975	60	2035	63,370	15	4,932	-
Gzowski Street	1240	99	200	PVC	1975	60	2035	39,970	15	3,111	-
Main Street	1241	18	250	PVC	1975	60	2035	7,260	15	565	-
Main Street	1242	208	150	PVC	1975	60	2035	83,960	15	6,534	-
Main Street	1243	134	250	PVC	1975	60	2035	54,090	15	4,210	-
Division Street	1244	104	150	PVC	1975	60	2035	41,980	15	3,267	-
Main Street	1245	90	250	PVC	1975	60	2035	36,330	15	2,827	-
Main Street	1246	108	250	PVC2	2004	85	2089	43,600	69	1,171	-
Division Street	1247	167	150	PVC	1975	60	2035	67,410	15	5,246	-
Main Street	1248	103	250	PVC	1975	60	2035	41,580	15	3,236	-
Inkerman Street	1249	101	150	PVC	1975	60	2035	40,770	15	3,173	-
Passmore Street	1250	93	150	PVC	1975	60	2035	37,540	15	2,922	-
Mary Street	1251	163	200	PVC	1975	60	2035	65,790	15	5,120	-
Passmore Street	1252	102	150	PVC	1975	60	2035	41,180	15	3,205	-
Balaclava Street	1253	163	150	PVC	1975	60	2035	65,790	15	5,120	-
Mary Street	1254	203	150	PVC	1975	60	2035	81,940	15	6,377	-
Alma Street	1255	187	150	PVC	1975	60	2035	75,490	15	5,875	-
Main Street	1256	151	200	PVC	1975	60	2035	60,950	15	4,743	-

Street	Asset ID	Length (m)	Diameter (mm)	Material	Year Installed	Estimated Life	Replacement Year	Main Replacement Costs (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Main Street	1257	201	250	PVC	1975	60	2035	81,130	15	6,314	-
George Street	1258	116	150	PVC	1975	60	2035	46,820	15	3,644	-
George Street	1259	5	250	PVC2	2004	85	2089	2,020	69	54	-
Main Street	1260	118	250	PVC	1975	60	2035	47,630	15	3,707	-
Main Street	1262	100	250	PVC	1975	60	2035	40,370	15	3,142	-
Carrol Street	1263	103	150	PVC	1975	60	2035	41,580	15	3,236	-
Weatherald Street	1264	212	150	PVC	1975	60	2035	85,570	15	6,660	-
Frederick Street	1265	104	150	PVC	1975	60	2035	41,980	15	3,267	-
Main Street	1266	111	200	PVC	1975	60	2035	44,810	15	3,487	-
Main Street	1267	89	250	PVC	1975	60	2035	35,920	15	2,795	-
Main Street	1268	54	250	PVC	1975	60	2035	21,790	15	1,696	-
Station Street	1269	111	200	PVC	1975	60	2035	44,810	15	3,487	-
Catherine	1270	36	200	PVC	1975	60	2035	14,530	15	1,131	-
Catherine	1271	140	150	PVC	1975	60	2035	56,520	15	4,399	-
Passmore Street	1272	100	150	PVC	1975	60	2035	40,370	15	3,142	-
Mackenzie Street	1273	56	150	PVC	1975	60	2035	22,600	15	1,759	-
Dennis Street	1274	138	150	PVC	1975	60	2035	55,710	15	4,336	-
Gowan Street	1275	92	150	PVC	1975	60	2035	37,130	15	2,890	-
Dowler Street	1276	112	150	PVC	1975	60	2035	45,210	15	3,518	-
Main Street	1277	123	250	PVC	1975	60	2035	49,650	15	3,864	-
Main Street	1278	180	250	PVC	1975	60	2035	72,660	15	5,655	-
Valley Road	1279	62	250	PVC	1975	60	2035	25,030	15	1,948	-
Main Street	1280	88	250	PVC	1975	60	2035	35,520	15	2,764	-
Spring Street	1281	51	150	PVC	1975	60	2035	20,580	15	1,602	-
Pine Street	1282	144	150	PVC	1975	60	2035	58,130	15	4,524	-
Harris Street	1284	491	150	PVC2	2019	85	2104	387,680	84	9,566	-
Harris Street	1285	271	200	PVC2	2019	85	2104	225,220	84	5,557	-
Carrol Street	1287	104	150	PVC	1975	60	2035	41,980	15	3,267	-
Main Street	1288	47	200	PVC	1975	60	2035	18,970	15	1,476	-
Guelph Street	1289	153	200	PVC	1975	60	2035	61,760	15	4,807	-
Guelph Street	1290	79	200	PVC	1975	60	2035	31,890	15	2,482	-
Guelph Street	1291	68	200	PVC	1975	60	2035	27,450	15	2,136	-
Balaclava Street	1292	152	150	PVC	1975	60	2035	61,360	15	4,775	-
Richardson Street	1293	25	150	PVC	1975	60	2035	10,100	15	786	-
Alma Street	1294	160	150	PVC	1975	60	2035	64,580	15	5,026	-

Street	Asset ID	Length (m)	Diameter (mm)	Material	Year Installed	Estimated Life	Replacement Year	Main Replacement Costs (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Alma Street	1295	83	150	PVC	1975	60	2035	33,500	15	2,607	-
Alma Street	1296	240	150	PVC	1975	60	2035	96,880	15	7,540	-
Milne Place	1297	82	150	PVC	1975	60	2035	33,100	15	2,576	-
Milne Place	1298	114	150	PVC	1975	60	2035	46,020	15	3,582	-
Clara Street	1299	70	150	PVC	1975	60	2035	28,260	15	2,199	-
Henry Street	1300	111	150	PVC2	1985	85	2070	44,810	50	1,426	-
Frederick Street	1301	101	150	PVC2	1985	85	2070	40,770	50	1,297	-
Henry Street	1302	147	150	PVC2	1985	85	2070	59,340	50	1,888	-
Henry Street	1303	105	150	PVC2	1985	85	2070	42,390	50	1,349	-
Henry Street	1304	272	150	PVC2	1985	85	2070	109,790	50	3,494	-
Henry Street	1305	102	150	PVC2	1985	85	2070	41,180	50	1,310	-
Parkedge Street	1306	95	150	PVC2	1987	85	2072	38,340	52	1,193	-
Parkedge Street	1307	87	150	PVC2	1987	85	2072	35,120	52	1,093	-
Parkedge Street	1308	165	150	PVC2	1987	85	2072	66,600	52	2,072	-
Parkedge Street	1309	91	150	PVC2	1987	85	2072	36,730	52	1,143	-
Lou'S Blvd.	1310	105	150	PVC2	1989	85	2074	42,390	54	1,291	-
Lou'S Blvd.	1311	149	150	PVC2	1989	85	2074	60,150	54	1,832	-
Lou'S Blvd.	1312	101	150	PVC2	1989	85	2074	40,770	54	1,242	-
Lou Hilt'S Cres.	1313	60	150	PVC2	1989	85	2074	24,210	54	737	-
Lou'S Blvd.	1314	118	150	PVC2	1989	85	2074	47,630	54	1,450	-
Lou'S Blvd.	1315	98	150	PVC2	1989	85	2074	39,550	54	1,204	-
Lou'S Blvd.	1316	182	150	PVC2	1989	85	2074	73,470	54	2,237	-
Lou'S Blvd.	1317	204	150	PVC2	1989	85	2074	82,340	54	2,507	-
Queen Street	1318	160	150	PVC2	1990	85	2075	64,580	55	1,947	-
Gzowski Street	1319	100	200	PVC2	1990	85	2075	40,370	55	1,217	-
Christie Street	1320	104	150	PVC2	1990	85	2075	41,980	55	1,265	-
Landrex Street	1321	194	150	PVC2	1990	85	2075	78,310	55	2,361	-
Christie Street	1322	106	150	PVC2	1990	85	2075	42,790	55	1,290	-
Christie Street	1323	108	150	PVC2	1990	85	2075	43,600	55	1,314	-
Christie Street	1324	96	150	PVC2	1990	85	2075	38,760	55	1,168	-
Christie Street	1325	87	150	PVC2	1990	85	2075	35,120	55	1,059	-
Christie Street	1326	118	150	PVC2	1990	85	2075	47,630	55	1,436	-
Gzowski Street	1327	101	150	PVC2	1990	85	2075	40,770	55	1,229	-
Princess Street	1328	169	150	PVC2	1990	85	2075	68,210	55	2,056	-
Princess Street	1329	181	150	PVC2	1990	85	2075	73,070	55	2,203	-
Jackson Street	1330	103	150	PVC2	1990	85	2075	41,580	55	1,253	-
Cobblestone Place	1331	285	150	PVC2	1992	85	2077	189,480	57	5,601	-

Street	Asset ID	Length (m)	Diameter (mm)	Material	Year Installed	Estimated Life	Replacement Year	Main Replacement Costs (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Cobblestone Place	1332	137	150	PVC2	1992	85	2077	91,090	57	2,693	-
Cobblestone Place	1333	181	150	PVC2	1992	85	2077	120,330	57	3,557	-
Cobblestone Place	1334	165	150	PVC2	1992	85	2077	109,690	57	3,243	-
Cobblestone Place	1335	189	150	PVC2	1992	85	2077	125,660	57	3,715	-
May Street	1336	92	150	PVC2	1998	85	2083	61,170	63	1,716	-
John Street	1337	281	150	PVC2	1998	85	2083	186,820	63	5,242	-
Maclennan Street	1338	99	150	PVC2	1998	85	2083	65,810	63	1,847	-
Maclennan Street	1339	180	150	PVC2	1998	85	2083	119,670	63	3,358	-
May Street	1340	118	150	PVC2	1998	85	2083	78,450	63	2,201	-
Bernardi Crescent	1341	149	150	PVC2	1998	85	2083	99,060	63	2,779	-
Bernardi Crescent	1342	121	150	PVC2	1998	85	2083	80,450	63	2,257	-
Bernardi Crescent	1343	101	150	PVC2	1998	85	2083	67,150	63	1,884	-
Riverwalk Place	1344	43	150	PVC2	1999	85	2084	28,590	64	796	-
Riverwalk Place	1345	13	150	PVC2	1999	85	2084	8,640	64	241	-
Riverwalk Place	1346	40	150	PVC2	1999	85	2084	26,590	64	740	-
Riverwalk Place	1347	32	150	PVC2	1999	85	2084	21,280	64	592	-
Riverwalk Place	1348	13	150	PVC2	1999	85	2084	8,640	64	241	-
Riverwalk Place	1349	16	150	PVC2	1999	85	2084	10,640	64	296	-
Riverwalk Place	1350	67	150	PVC2	1999	85	2084	44,550	64	1,240	-
Riverwalk Place	1351	9	150	PVC2	1999	85	2084	5,980	64	166	-
Riverwalk Place	1352	9	150	PVC2	1999	85	2084	5,980	64	166	-
Riverwalk Place	1353	56	150	PVC2	1999	85	2084	37,230	64	1,036	-
Riverwalk Place	1354	24	150	PVC2	1999	85	2084	15,950	64	444	-
Riverwalk Place	1355	30	150	PVC2	1999	85	2084	19,620	64	546	-
Riverwalk Place	1356	25	150	PVC2	1999	85	2084	16,620	64	463	-
Riverwalk Place	1357	41	150	PVC2	1999	85	2084	27,260	64	759	-
Main Street	1358	244	150	PVC2	1999	85	2084	162,230	64	4,516	-
Ridge Road	1359	77	200	PVC2	1999	85	2084	51,190	64	1,425	-
Ridge Road	1360	24	150	PVC2	1999	85	2084	15,950	64	444	-
Ridge Road	1361	137	150	PVC2	1999	85	2084	91,090	64	2,536	-
Ridge Road	1362	35	150	PVC2	1999	85	2084	23,270	64	648	-
Dunbar Street	1363	35	150	PVC2	1999	85	2084	23,270	64	648	-
Dunbar Street	1364	92	150	PVC2	1999	85	2084	61,170	64	1,703	-
Dunbar Street	1365	26	150	PVC2	1999	85	2084	17,290	64	481	-
Academy Place	1366	112	150	PVC2	1999	85	2084	74,470	64	2,073	-
Jolliffe Avenue	1367	45	200	PVC2	1999	85	2084	29,920	64	833	-

Street	Asset ID	Length (m)	Diameter (mm)	Material	Year Installed	Estimated Life	Replacement Year	Main Replacement Costs (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Jolliffe Avenue	1368	107	200	PVC2	1999	85	2084	71,140	64	1,980	-
Jolliffe Avenue	1369	169	200	PVC2	1999	85	2084	112,360	64	3,128	-
Parkview Lane	1370	45	150	PVC2	1999	85	2084	29,920	64	833	-
Parkview Lane	1371	166	150	PVC2	1999	85	2084	110,360	64	3,072	-
Dunbar Street	1372	61	200	PVC2	1999	85	2084	40,550	64	1,129	-
Main Street	1373	120	150	PVC2	1999	85	2084	79,780	64	2,221	-
Ridge Road	1374	92	150	PVC2	1999	85	2084	61,170	64	1,703	-
Ridge Road	1375	96	150	PVC2	1999	85	2084	63,830	64	1,777	-
Ridge Road	1376	117	150	PVC2	1999	85	2084	77,790	64	2,166	-
Ridge Road	1377	136	150	PVC2	1999	85	2084	90,420	64	2,517	-
Ridge Road	1378	35	150	PVC2	1999	85	2084	23,270	64	648	-
Ridge Road	1379	95	150	PVC2	1999	85	2084	63,160	64	1,758	-
Dundar Street	1380	240	150	PVC2	2001	85	2086	159,560	66	4,375	-
Dundar Street	1381	110	150	PVC2	2003	85	2088	73,140	68	1,977	-
Ridge Road	1382	220	150	PVC2	2001	85	2086	146,260	66	4,011	-
Ridge Road	1383	245	150	PVC2	2003	85	2088	162,880	68	4,403	-
Ridge Road	1384	137	150	PVC2	2004	85	2089	91,090	69	2,445	-
Old Maple Boulevard	1385	183	150	PVC2	2001	85	2086	121,660	66	3,336	-
Old Maple Boulevard	1386	234	150	PVC2	2003	85	2088	155,240	68	4,196	-
Scots Lane	1387	145	150	PVC2	2001	85	2086	96,400	66	2,643	-
Scots Lane	1388	76	150	PVC2	2003	85	2088	50,530	68	1,366	-
Milne Place	1389	331	150	PVC2	2004	85	2089	220,060	69	5,908	-
Highway 7	1390	148	150	PVC2	2004	85	2089	98,400	69	2,642	-
Block 43	1391	70	150	PVC2	2004	85	2089	46,540	69	1,249	-
Jolliffe Avenue	1392	157	200	PVC2	2004	85	2089	113,200	69	3,039	-
Watermain Easement (Parallel To Ridge Road)	1393	40	150	PVC2	2004	85	2089	28,620	69	768	-
Block 42 (Easement To Ridge Rd. Sewage Pumping Station)	1394	31	150	PVC2	2004	85	2089	22,580	69	606	-
Maclennan Street	1395	459	200	PVC2	2004	85	2089	330,110	69	8,862	-
Parkinson Drive	1396	384	200	PVC2	2004	85	2089	276,180	69	7,415	-
Hayward Cord	1397	270	200	PVC2	2004	85	2089	194,190	69	5,213	-
May Street	1398	260	200	PVC2	2004	85	2089	186,990	69	5,020	-
Gamble Lane	1399	231	200	PVC2	2004	85	2089	166,140	69	4,460	-
Wheeler Court	1400	278	200	PVC2	2004	85	2089	199,580	69	5,358	-
Fountain Street	1401	102	200	PVC2	2004	85	2089	73,360	69	1,969	-
Jolliffe Avenue	1402	73	200	PVC2	2006	85	2091	52,500	71	1,391	-

Street	Asset ID	Length (m)	Diameter (mm)	Material	Year Installed	Estimated Life	Replacement Year	Main Replacement Costs (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Jolliffe Avenue	1403	27	200	PVC2	2006	85	2091	19,420	71	515	-
Jolliffe Avenue	1404	66	200	PVC2	2006	85	2091	47,470	71	1,258	-
Jolliffe Avenue	1405	11	200	PVC2	2006	85	2091	7,550	71	200	-
Jolliffe Avenue	1406	77	200	PVC2	2006	85	2091	55,380	71	1,467	-
Jolliffe Avenue	1407	13	200	PVC2	2006	85	2091	9,340	71	247	-
Jolliffe Avenue	1408	50	200	PVC2	2006	85	2091	35,600	71	943	-
Ridge Top Crescent	1409	43	150	PVC2	2006	85	2091	30,560	71	810	-
Ridge Top Crescent	1410	108	150	PVC2	2006	85	2091	77,670	71	2,058	-
Ridge Top Crescent	1411	78	150	PVC2	2006	85	2091	55,740	71	1,477	-
Ridge Top Crescent	1412	265	150	PVC2	2006	85	2091	190,230	71	5,040	-
Hampson Crescent	1413	283	150	PVC2	2006	85	2091	203,530	71	5,392	-
Alicia Lane	1414	92	150	PVC2	2006	85	2091	66,170	71	1,753	-
Gabriel Lane	1415	81	150	PVC2	2006	85	2091	57,890	71	1,534	-
Carter'S Lane	1416	182	150	PVC2	2006	85	2091	130,890	71	3,468	-
Millview Court	1417	15	100	PVC2	2007	85	2092	10,790	72	284	-
Millview Court	1418	195	150	PVC2	2007	85	2092	139,880	72	3,683	-
Millview Court (Watermain Easement)	1419	192	150	PVC2	2007	85	2092	138,080	72	3,635	-
Gates Condo	1420	115	150	PVC2	2008	85	2093	82,710	73	2,164	-
Richardson Street - Balclava to easement	3837	100	200	PVC2	2018	85	2103	74,650	83	1,851	-
Easement Richardson to Valley Road	3838	160	200	PVC2	2018	85	2103	188,590	83	4,675	-
Richardson Street - 72 m south of Guelph Street	3850	72	150	PVC2	2000	85	2085	15,220	65	420	-
Jolliffe Avenue		230	200	PVC2	2012	85	2097	41,470	77	1,060	-
Linden Avenue		225	150	PVC2	2012	85	2097	40,560	77	1,037	-
Hickory Drive		380	150	PVC2	2012	85	2097	68,510	77	1,751	-
Hickory Drive Easement		100	150	PVC2	2012	85	2097	18,030	77	461	-
Juniper Street		190	150	PVC2	2012	85	2097	34,250	77	876	-
Chestnut Drive		190	150	PVC2	2012	85	2097	34,250	77	876	-
Coker Crescent		271	150	PVC2	2012	85	2097	48,860	77	1,249	-
Drenters Court		168	150	PVC2	2012	85	2097	30,290	77	774	-
Drenters Easement		184	150	PVC2	2012	85	2097	33,170	77	848	-
Gagnon Place		101	150	PVC2	2012	85	2097	18,210	77	466	-
Sammon Drive		380	150	PVC2	2012	85	2097	68,220	77	1,744	-
Bonarrow Subdivison		1,860	200	PVC2	2018	85	2103	291,600	83	7,229	-
Bonarrow Subdivison		27	150	PVC2	2018	85	2103	3,660	83	91	-
Total		**28,297**						**14,009,540**		**540,122**	**0**

Table A-5
Township of Guelph/Eramosa
Water & Wastewater Vehicles

Description	Initial In-Use Year	Estimated Life	Replacement Year	Historical Cost	Total Replacement Cost (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
2010 Chevrolet HHR Unit 118	2010	12	2022	18,914	47,020	2	suggested for 10 year capital forecast	47,020
2017 Ford F-250 Cab 1/2	2016	10	2026	43,000	61,120	6	suggested for 10 year capital forecast	61,120
2018 Ford Transit Van	2018	10	2028	40,300	58,770	8	suggested for 10 year capital forecast	58,770
2020 Ford F-150 4x4	2020	10	2030	38,730	58,770	10	suggested for 10 year capital forecast	58,770
Total				**140,944**	**225,680**		**0**	**225,680**
Note: Vehicles shared between Water-Rockwood at 56%, Water-Hamilton Dr. at 14% and wastewater at 30%								

Appendix B
Water System – Hamilton Drive Inventory Data

Appendix B: Water System – Hamilton Drive Inventory Data

Table B-1
Township of Guelph/Eramosa
Hamilton Drive Water Facilities

Item	Asset ID	Year Installed	Estimated Life	Replacement Year	Replacement Cost (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
HUNTINGTON PUMPHOUSE:								
Huntington Well No. 2	1529	1986						
- Well No. 2		1986	56	2042	259,060	22	14,671	-
- Well Pumps		1986	39	2025	19,980	5	suggested for 10 year capital forecast	19,980
- Well Piping		1986	39	2025	17,630	5	suggested for 10 year capital forecast	17,630
Huntington Pumphouse	1530	1986	35	2021				
- Replace High Lift Pumps with VFD		2006	20	2026	14,110	6	suggested for 10 year capital forecast	14,110
- Flow Meters		2006	18	2024	10,580	4	suggested for 10 year capital forecast	10,580
- Piping		2006	30	2036	58,770	16	4,328	-
- Building		2006	100	2106	441,970	86	10,808	-
- Roof		2006	21	2027	14,110	7	suggested for 10 year capital forecast	14,110

Item	Asset ID	Year Installed	Estimated Life	Replacement Year	Replacement Cost (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
CROSS CREEK PUMPHOUSE								
Cross Creek Well No. 3	1531	1991						
- Well		1991	50	2041	270,720	21	15,914	-
- Well Pumps		1991	34	2025	19,980	5	suggested for 10 year capital forecast	19,980
- Well Piping		1991	34	2025	17,630	5	suggested for 10 year capital forecast	17,630
Cross Creek Pumphouse	1532	1991	25	2020				
- Building		1991	100	2091	481,940	71	12,769	-
- Roof		2013	14	2027	14,110	7	suggested for 10 year capital forecast	14,110
- Replace High Lift Pumps with VFD		2008	17	2025	28,210	5	suggested for 10 year capital forecast	28,210
- Treatment and Process Piping		2000	35	2035	58,770	15	4,574	-
	1533							
Hamilton Drive Standpipe		1996	50	2046				
Cross Creek Well No. 3		1996	30	2026	76,410	6	suggested for 10 year capital forecast	76,410
SCADA system RPU & HMI upgrades	1540	2009	5	2020	16,630	0	suggested for 10 year capital forecast	16,630
Total					**1,820,610**		**63,064**	**249,380**

Table B-2
Township of Guelph/Eramosa
Hamilton Drive Water Hydrants

Location	Number of Hydrants	Year Installed	Estimated Life	Replacement Year	Historical Cost (per unit)	Total Historical Cost	Hydrant Replacement Costs (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Blue Forest	6	1969	60	2029	444	2,665	26,800	9	suggested for 10 year capital forecast	26,800
Woodfield	1	1977	60	2037	765	765	4,470	17	313	-
Jessica/George Wellington	4	1986	60	2046	1,482	5,928	17,870	26	888	-
Cross Creek	12	1990	60	2050	1,938	23,260	53,600	30	2,393	-
Victoria Rd, Conservation, Christine/Jason/Adam	20	1996	60	2056	2,002	40,045	89,340	36	3,505	-
Yarl Place	2	2014	60	2074	756	1,511	8,930	54	272	-
Bedford Road	5	2019	60	2079	8,750	43,750	22,330	59	648	-
Total	**50**					**117,924**	**223,340**		**8,019**	**26,800**

Table B-3
Township of Guelph/Eramosa
Hamilton Drive Watermains

Street	Detail	Asset ID	Length (m)	Diameter (mm)	Material	Year Installed	Estimated Life	Replacement Year	Total Main Replacement Costs (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Hamilton Drive		1198	65	150	PVC2	1969	100	2069	56,770	49	1,828	-
Hamilton Drive		1199	100	150	PVC2	1969	100	2069	71,870	49	2,314	-
Hamilton Drive		1200	55	150	PVC2	1969	100	2069	39,850	49	1,283	-
Blue Forest Crescent		1201	445	150	PVC2	1969	100	2069	319,820	49	10,299	-
Blue Forest Crescent		1202	250	150	PVC2	1969	100	2069	179,670	49	5,786	-
Blue Forest Crescent	easement to Woodfield	1203	140	150	PVC2	1977	100	2077	100,620	57	2,974	-
Jessica Lane		1204	115	150	PVC2	1986	100	2086	82,650	66	2,266	-
Jessica Lane		1205	420	150	PVC2	1986	100	2086	301,850	66	8,277	-
George Wellington Place		1206	220	150	PVC2	1986	100	2086	158,110	66	4,336	-
Bedford Road (easement)	Cross Creek to Bedford	1207	100	200	PVC2	1990	100	2090	118,580	70	3,162	-
Bedford Road	Walkway to Yarl		180	200	PVC2	2019	100	2119	130,520	99	3,038	-
Bedford Road	Yarl to Pandora		230	150	PVC2	2019	100	2119	166,780	99	3,882	-
Bedford Road	Pandora west to Hwy6		165	150	PVC2	2019	100	2119	119,650	99	2,785	-
Cross Creek Blvd.		1208	890	150	PVC2	1990	100	2090	639,640	70	17,058	-
Cross Creek Blvd.		1209	120	150	PVC2	1990	100	2090	86,240	70	2,300	-
Cross Creek Blvd.		1210	75	200	PVC2	1990	100	2090	53,910	70	1,438	-
Cross Creek Blvd.		1211	105	200	PVC2	1990	100	2090	75,460	70	2,012	-
Cross Creek Blvd.		1212	50	200	PVC2	1990	100	2090	35,930	70	958	-
Easement	Cross Creek to Yarl	1213	60	150	PVC2	1990	100	2090	43,480	70	1,160	-
Yarl Place	Easement to Bedford		340	150	PVC2	2014	100	2114	246,540	94	5,838	-
Victoria Rd.		1214	480	250	PVC2	1996	100	2096	344,980	76	8,869	-
Conservation Road	Victoria to Jessica	1215	225	250	PVC2	1996	100	2096	161,710	76	4,157	-
Conservation Road	Jessica to Christine	1216	390	200	PVC2	1996	100	2096	280,290	76	7,206	-
Conservation Road	Christine to Jason	1217	310	200	PVC2	1996	100	2096	222,800	76	5,728	-
Conservation Road		1218	170	200	PVC2	1996	100	2096	122,180	76	3,141	-
Conservation Road		1219	35	200	PVC2	1996	100	2096	25,150	76	647	-
Conservation Road		1220	50	200	PVC2	1996	100	2096	35,930	76	924	-
Conservation Road		1221	175	200	PVC2	1996	100	2096	125,770	76	3,233	-
Christine Drive		1222	500	200	PVC2	1996	100	2096	359,350	76	9,238	-
Jason Drive		1223	440	150	PVC2	1996	100	2096	316,220	76	8,129	-
Cross Creek Blvd.		1224	150	200	PVC2	1996	100	2096	107,800	76	2,771	-
Adam Court		1226	135	150	PVC2	1996	100	2096	97,020	76	2,494	-
Total			**7,185**						**5,227,140**		**139,532**	**0**

Appendix C
Wastewater System Inventory Data

Appendix C: Wastewater System Inventory Data

Table C-1
Township of Guelph/Eramosa
Wastewater Facilities

Item	Component	Asset ID	Year Installed	Estimated Life	Historical Cost	Replacement Year	Replacement Cost	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Lou's Boulevard Sewage Pumping Station	Wet Well	1545	1987	80	76,398	2067	352,640	47	11,643	-
Lou's Boulevard Sewage Pumping Station	Pumps	1545	2019	15	15,000	2034	11,750	14	971	-
Lou's Boulevard Sewage Pumping Station	Piping	1545	2019	40	50,000	2059	141,060	39	5,243	-
Lou's Boulevard Sewage Pumping Station	Controls	1545	2019	25	100,000	2044	117,550	24	6,215	-
Lou's Boulevard Sewage Pumping Station	Back up Power Generator	1545	2019	25	75,000	2044	88,160	24	4,661	-
Valley Road Sewage Pumping Station	Generator	2625	1999	25	60,000	2024	176,320	4	suggested for 10 year capital forecast	176,320
Valley Road Sewage Pumping Station	Wet Well	2626	1999	35	120,436	2034	587,730	14	48,548	-
Valley Road Sewage Pumping Station	Meter Chamber	2627	2014	50	60,000	2064	70,530	44	2,425	-
Valley Road Sewage Pumping Station	Pumps	2628	2014	15	150,000	2029	188,070	9	suggested for 10 year capital forecast	188,070
Valley Road Sewage Pumping Station	Piping	2629	2014	35	180,000	2049	176,320	29	8,072	-
Valley Road Sewage Pumping Station	Electrical & Controls	2630	2014	20	225,000	2034	211,580	14	17,477	-
Ridge Road Sewage Pumping Station	Generator	1547	1999	30	49,184	2029	176,320	9	suggested for 10 year capital forecast	176,320
Ridge Road Sewage Pumping Station	Wet Well	1547	1999	60	98,369	2059	352,640	39	13,108	-
Ridge Road Sewage Pumping Station	Pumps	1547	2019	19	2,623	2038	9,400	18	627	-
Ridge Road Sewage Pumping Station	Piping	1547	1999	22	19,674	2021	70,530	1	suggested for 10 year capital forecast	70,530
Ridge Road Sewage Pumping Station	Electrical	1547	1999	30	8,197	2029	29,390	9	suggested for 10 year capital forecast	29,390
Ridge Road Sewage Pumping Station	Controls	1547	2019	25	8,197	2044	29,390	24	1,554	-
Ridge Road Sewage Pumping Station	Building	1547	1999	75	19,674	2074	70,530	54	2,148	-
Ridge Road Sewage Pumping Station	Roof	1547	1999	35	4,591	2034	16,460	14	1,360	-
Mill Run Sewage Pumping Station	Generator	2556	2010	30	51,052	2040	176,320	20	10,783	-
Mill Run Sewage Pumping Station	Wet Well	2556	2010	60	136,137	2070	470,190	50	14,963	-
Mill Run Sewage Pumping Station	Pumps	2556	2019	15	8,509	2034	29,390	14	2,428	-

Item	Component	Asset ID	Year Installed	Estimated Life	Historical Cost	Replacement Year	Replacement Cost	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Mill Run Sewage Pumping Station	Pumps	2556	2020	15	8,509	2035	29,390	15	2,287	-
Mill Run Sewage Pumping Station	Piping	2556	2010	14	17,017	2024	58,770	4	suggested for 10 year capital forecast	58,770
Mill Run Sewage Pumping Station	Electrical & Controls	2556	2010	30	27,227	2040	94,040	20	5,751	-
Mill Run Sewage Pumping Station	Building	2556	2010	75	27,227	2085	94,040	65	2,598	-
Mill Run Sewage Pumping Station	Roof	2556	2010	14	4,765	2024	16,460	4	suggested for 10 year capital forecast	16,460
Rockmosa Sewage Pumping Station - contructed 2019	Wet Well and meter chamber		2019	80	180,000	2099	183,600	79	4,643	-
Rockmosa Sewage Pumping Station assume 2021? Expected assumption by Township in 2021	Pumps		2019	15	60,000	2034	61,200	14	5,055	-
Rockmosa Sewage Pumping Station	Piping		2019	40	200,000	2059	204,000	39	7,583	-
Rockmosa Sewage Pumping Station	Electcial and Controls		2019	25	270,000	2044	275,400	24	14,561	-
Rockmosa Sewage Pumping Station	Building		2019	50	220,000	2069	224,400	49	7,227	-
Rockmosa Sewage Pumping Station	Generator		2019	25	90,000	2044	91,800	24	4,854	-
Total							**4,885,370**		**206,784**	**715,860**

Table C-2
Township of Guelph/Eramosa
Wastewater Facilities – Skyway Monitoring Station

Item	Component	Asset ID	Year Installed	Historical Cost	Estimated Life	Replacement Year	Replacement Cost	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Skyway Monitoring Station	Meter Chamber	2644	2014	294,527	51	2065	356,170	45	12,078	-
Skyway Monitoring Station	Monitoring Manhole	2645	2014	230,000	26	2040	273,060	20	16,699	-
Skyway Monitoring Station	Flow Meter	2646	2014	25,000	21	2035	29,740	15	2,315	-
Skyway Monitoring Station	H2S Monitor	2647	2014	15,000	8	2022	17,870	2	suggested for 10 year capital forecast	17,870
Skyway Monitoring Station	Piping	2648	2014	120,000	31	2045	94,980	25	4,865	-
Skyway Monitoring Station	Electrical & Controls	2649	2014	100,000	21	2035	118,720	15	9,239	-
Total							**890,540**		**45,196**	**17,870**

Table C-3
Township of Guelph/Eramosa
Sanitary Sewers

Street	Asset ID	Length (m)	Diameter (mm)	Material	Year Installed	Estimated Life	Historical Cost	Replacement Year	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Main Street	916	84	250	PVC	1975	75	18,871	2050	104,820	30	4,680	-
Main Street	917	76	250	PVC	1975	75	17,093	2050	94,940	30	4,239	-
Main Street	918	76	250	PVC	1975	75	17,093	2050	94,940	30	4,239	-
Main Street	919	109	250	PVC	1975	75	24,341	2050	135,200	30	6,037	-
Main Street	920	12	250	PVC	1975	75	2,803	2050	15,570	30	695	-
Gzowsky Street	921	99	200	PVC	1975	75	22,153	2050	123,050	30	5,494	-
Gzowsky Street	922	101	200	PVC	1975	75	22,632	2050	125,710	30	5,613	-
Gzowsky Street	923	77	200	PVC	1975	75	17,230	2050	95,700	30	4,273	-
Christie Street	924	46	200	PVC	1975	75	10,324	2050	57,350	30	2,561	-
Christie Street	925	55	200	PVC	1975	75	12,239	2050	67,980	30	3,035	-
Christie Street	926	100	200	PVC	1975	75	22,495	2050	124,950	30	5,579	-
Jackson Street	927	100	250	PVC	1975	75	22,495	2050	124,950	30	5,579	-
Jackson Street	928	101	250	PVC	1975	75	22,563	2050	125,330	30	5,596	-
Jackson Street	929	101	250	PVC	1975	75	22,563	2050	125,330	30	5,596	-
Mackenzie Street	930	123	200	PVC	1975	75	27,555	2050	153,050	30	6,834	-
Mackenzie Street	931	48	200	PVC	1975	75	10,871	2050	60,380	30	2,696	-
Mackenzie Street	932	103	200	PVC	1975	75	23,110	2050	128,370	30	5,732	-
Mackenzie Street	933	68	200	PVC	1975	75	15,316	2050	85,070	30	3,798	-
Brady Street	934	55	200	PVC	1975	75	12,307	2050	68,360	30	3,052	-
Brady Street	935	37	200	PVC	1975	75	8,342	2050	46,330	30	2,069	-
Brady Street	936	49	200	PVC	1975	75	11,008	2050	61,140	30	2,730	-
Brady Street	937	68	200	PVC	1975	75	15,179	2050	84,310	30	3,764	-
Queen Street	938	97	200	PVC	1975	75	21,811	2050	121,150	30	5,409	-
Queen Street	939	56	200	PVC	1975	75	12,512	2050	69,500	30	3,103	-
Queen Street	940	29	200	PVC	1975	75	6,427	2050	35,700	30	1,594	-
Dennis Street	941	138	200	PVC	1975	75	30,957	2050	171,950	30	7,678	-
Main Street	942	56	250	PVC	1975	75	12,512	2050	69,500	30	3,103	-
Main Street	943	87	250	PVC	1975	75	19,418	2050	107,860	30	4,816	-
Main Street	944	95	250	PVC	1975	75	21,333	2050	118,490	30	5,291	-
Main Street	945	85	200	PVC	1975	75	19,076	2050	105,960	30	4,731	-

Street	Asset ID	Length (m)	Diameter (mm)	Material	Year Installed	Estimated Life	Historical Cost	Replacement Year	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Main Street	946	103	200	PVC	1975	75	23,042	2050	127,990	30	5,715	-
Main Street	947	112	200	PVC	1975	75	25,161	2050	139,760	30	6,240	-
Main Street	948	94	200	PVC	1975	75	21,196	2050	117,730	30	5,257	-
Main Street	949	94	200	PVC	1975	75	20,991	2050	116,590	30	5,206	-
Station St. East	950	22	200	PVC	1975	75	84,109	2050	27,340	30	1,221	-
Station St. West	951	108	200	PVC	1975	75	34,909	2050	134,820	30	6,020	-
Station St. West	952	98	200	PVC	1975	75	34,440	2050	121,530	30	5,426	-
Station St. West	953	91	200	PVC	1975	75	4,923	2050	112,790	30	5,036	-
Division Street	954	102	300	PVC	1975	75	24,273	2050	127,610	30	5,698	-
Division Street	955	78	300	PVC	1975	75	21,880	2050	97,220	30	4,341	-
Division Street	956	79	300	PVC	1975	75	20,307	2050	98,360	30	4,392	-
Division Street	957	103	300	PVC	1975	75	22,974	2050	128,740	30	5,748	-
Gowan Street	958	92	200	PVC	1975	75	17,504	2050	114,630	30	5,118	-
Alma Street	959	99	200	PVC	1975	75	17,709	2050	123,810	30	5,528	-
Alma Street	960	96	200	PVC	1975	75	23,179	2050	119,250	30	5,325	-
Alma Street	961	49	200	PVC	1975	75	20,638	2050	60,760	30	2,713	-
Alma Street	962	80	300	PVC	1975	75	22,290	2050	99,500	30	4,443	-
Alma Street	963	81	300	PVC	1975	75	21,469	2050	101,400	30	4,528	-
Alma Street	964	80	300	PVC	1975	75	10,940	2050	99,880	30	4,460	-
Alma Street	965	78	300	PVC	1975	75	17,914	2050	96,840	30	4,324	-
Alma Street	966	77	300	PVC	1975	75	18,256	2050	96,080	30	4,290	-
Alma Street	967	75	300	PVC	1975	75	17,982	2050	93,810	30	4,189	-
Alma Street	968	114	300	PVC	1975	75	17,435	2050	142,040	30	6,342	-
Alma Street	969	74	300	PVC	1975	75	17,299	2050	92,670	30	4,138	-
Alma Street (Ostrander Easement)	970	70	300	PVC	1975	75	16,888	2050	87,730	30	3,917	-
Alma Street (Ostrander Easement)	971	40	300	PVC	1975	75	25,572	2050	49,370	30	2,204	-
Alma Street (Ostrander Easement)	972	94	300	PVC	1975	75	16,683	2050	117,730	30	5,257	-
Alma Street (Ostrander Easement)	973	47	300	PVC	1975	75	15,794	2050	58,870	30	2,629	-
Guelph Street	974	79	200	PVC	1975	75	8,889	2050	98,360	30	4,392	-
Guelph Street	975	91	200	PVC	1975	75	21,196	2050	113,930	30	5,087	-
Guelph Street	976	76	200	PVC	1975	75	10,598	2050	94,940	30	4,239	-
Guelph Street	977	60	200	PVC	1975	75	17,709	2050	74,440	30	3,324	-
Guelph Street	978	77	200	PVC	1975	75	20,512	2050	95,320	30	4,256	-
Mary Street	979	85	200	PVC	1975	75	17,093	2050	105,580	30	4,714	-

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Mary Street	980	85	200	PVC	1975	75	13,401	2050	105,580	30	4,714	-
Mary Street	981	87	200	PVC	1975	75	17,162	2050	108,240	30	4,833	-
Balaclava Street	982	48	200	PVC	1975	75	19,008	2050	59,250	30	2,646	-
Balaclava Street	983	46	200	PVC	1975	75	19,008	2050	56,970	30	2,544	-
Balaclava Street	984	68	200	PVC	1975	75	19,486	2050	84,310	30	3,764	-
Balaclava Street	985	110	200	PVC	1975	75	10,666	2050	137,480	30	6,138	-
Richardson Street	986	23	200	PVC	1975	75	10,256	2050	28,100	30	1,255	-
Dowler Street	987	28	200	PVC	1975	75	15,179	2050	34,940	30	1,560	-
Catherine Street	988	105	200	PVC	1975	75	24,751	2050	131,020	30	5,850	-
Inkerman Street	989	101	200	PVC	1975	75	5,060	2050	125,710	30	5,613	-
Passmore Street	990	61	200	PVC	1975	75	6,290	2050	75,960	30	3,392	-
Passmore Street	991	101	200	PVC	1975	75	23,589	2050	125,330	30	5,596	-
Passmore Street	992	97	200	PVC	1975	75	22,632	2050	120,770	30	5,392	-
Valley Road	993	72	200	PVC	1975	75	13,675	2050	89,250	30	3,985	-
Valley Road	994	12	300	PVC	1975	75	22,563	2050	14,430	30	644	-
Valley Road	995	62	300	PVC	1975	75	21,743	2050	76,720	30	3,426	-
Valley Road	996	25	300	PVC	1975	75	16,068	2050	31,140	30	1,390	-
Valley Road (Milne Easement)	997	69	250	PVC	1975	75	2,598	2050	85,970	30	3,839	-
Main Street	998	94	250	PVC	1975	75	13,811	2050	117,350	30	5,240	-
Main Street	999	15	250	PVC	1975	75	5,607	2050	18,230	30	814	-
Main Street	1,000	59	200	PVC	1975	75	15,478	2050	74,060	30	3,307	-
Main Street	1,001	85	200	PVC	1975	75	48,263	2050	105,960	30	4,731	-
Main Street	1,002	92	200	PVC	1975	75	21,127	2050	114,690	30	5,121	-
Main Street	1,003	116	250	PVC	1975	75	3,282	2050	143,940	30	6,427	-
Main Street	1,004	105	250	PVC	1975	75	13,333	2050	131,400	30	5,867	-
George Street (Death Easement)	1,005	65	200	PVC	1975	75	19,076	2050	80,890	30	3,612	-
Harris Street	1,006	93	200	PVC	1975	43	20,649	2020	116,210	0	suggested for 10 year capital forecast	116,210
Harris Street	1,007	76	200	PVC	1975	43	25,914	2020	94,180	0	suggested for 10 year capital forecast	94,180
Harris Street	1,008	107	200	PVC	1975	43	23,657	2020	132,920	0	suggested for 10 year capital forecast	132,920

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Harris Street	1,009	92	200	PVC	1975	43	14,564	2020	115,070	0	suggested for 10 year capital forecast	115,070
Harris Street	1,010	91	200	PVC	1975	43	20,922	2020	112,790	0	suggested for 10 year capital forecast	112,790
Harris Street	1,011	81	200	PVC	1975	43	16,957	2020	101,020	0	suggested for 10 year capital forecast	101,020
Harris Street	1,012	81	200	PVC	1975	43	23,931	2020	101,400	0	suggested for 10 year capital forecast	101,400
Harris Street	1,013	81	200	PVC	1975	43	20,717	2020	101,400	0	suggested for 10 year capital forecast	101,400
Frederick Street	1,014	101	250	PVC	1975	75	20,307	2050	125,710	30	5,613	-
Weatherald Street	1,015	76	250	PVC	1975	75	18,187	2050	94,180	30	4,205	-
Weatherald Street	1,016	70	250	PVC	1975	75	18,256	2050	87,350	30	3,900	-
Weatherald Street	1,017	71	250	PVC	1975	75	18,256	2050	88,490	30	3,951	-
Henry Street	1,018	54	200	PVC	1985	75	40,531	2060	66,840	40	2,443	-
Main Street	1,019	85	200	PVC	1999	75	48,029	2074	105,910	54	3,225	-
Main Street	1,020	9	250	PVC	1999	75	9,371	2074	11,210	54	341	-
Main Street	1,021	84	250	PVC	1999	75	22,632	2074	104,660	54	3,187	-
Main Street	1,022	157	250	PVC	1999	75	34,589	2074	195,620	54	5,957	-
Main Street	1,023	23	250	PVC	1999	75	39,201	2074	28,660	54	873	-
Main Street	1,024	109	375	PVC2	2004	100	16,957	2104	136,340	84	3,364	-
Main Street	1,025	45	375	PVC2	2004	100	15,726	2104	56,590	84	1,396	-
Main Street	1,026	45	375	PVC2	2004	100	15,931	2104	55,830	84	1,378	-
Main Street	1,027	63	375	PVC2	2004	100	21,316	2104	78,230	84	1,930	-
Carrol Street	1,028	53	250	PVC2	2004	100	9,205	2104	65,700	84	1,621	-
Carrol Street	1,029	62	200	PVC2	2004	100	38,757	2104	77,850	84	1,921	-
Carrol Street	1,030	12	200	PVC2	2004	100	32,035	2104	15,190	84	375	-
Manse Easement	1,031	45	300	PVC2	2004	100	17,562	2104	56,070	84	1,384	-
Manse Easement	1,032	51	300	PVC2	2004	100	37,424	2104	63,550	84	1,568	-
Henry Street	1,033	23	200	PVC2	1985	100	2,422	2085	28,860	65	797	-
Henry Street	1,034	98	200	PVC2	1985	100	19,742	2085	121,530	65	3,357	-
Henry Street	1,035	81	200	PVC2	1985	100	202,653	2085	100,450	65	2,775	-

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Henry Street	1,036	44	200	PVC2	1985	100	113,247	2085	55,070	65	1,521	-
Henry Street	1,037	94	200	PVC2	1985	100	113,247	2085	117,350	65	3,242	-
Henry Street	1,038	6	200	PVC2	1985	100	22,150	2085	7,600	65	210	-
Henry Street	1,039	50	200	PVC2	1985	100	24,866	2085	61,900	65	1,710	-
Henry Street	1,040	510	200	PVC2	1985	100	20,293	2085	635,460	65	17,555	-
John Street	1,041	285	200	PVC2	1985	100	28,081	2085	355,110	65	9,810	-
Maclennan Street	1,042	285	200	PVC2	1985	100	4,287	2085	355,110	65	9,810	-
Parkedge Street	1,043	47	200	PVC2	1987	100	45,404	2087	58,870	67	1,603	-
Parkedge Street	1,044	53	200	PVC2	1987	100	46,589	2087	66,080	67	1,799	-
Parkedge Street	1,045	43	200	PVC2	1987	100	45,188	2087	53,930	67	1,468	-
Parkedge Street	1,046	60	200	PVC2	1987	100	45,080	2087	74,630	67	2,032	-
Parkedge Street	1,047	9	200	PVC2	1987	100	27,738	2087	11,390	67	310	-
Lou'S Boulevard	1,048	84	200	PVC2	1989	100	47,989	2089	105,040	69	2,820	-
Lou'S Boulevard	1,049	87	200	PVC2	1989	100	46,373	2089	107,780	69	2,894	-
Lou'S Boulevard	1,050	84	200	PVC2	1989	100	28,923	2089	104,540	69	2,807	-
Lou'S Boulevard	1,051	84	200	PVC2	1989	100	6,894	2089	104,290	69	2,800	-
Lou'S Boulevard	1,052	52	200	PVC2	1989	100	44,542	2089	64,170	69	1,723	-
Lou'S Boulevard	1,053	89	200	PVC2	1989	100	60,700	2089	111,020	69	2,981	-
Lou'S Boulevard	1,054	86	200	PVC2	1989	100	57,738	2089	107,280	69	2,880	-
Lou'S Boulevard	1,055	54	200	PVC2	1989	100	33,824	2089	66,910	69	1,796	-
Lou'S Boulevard	1,056	13	200	PVC2	1989	100	47,935	2089	15,950	69	428	-
Lou'S Boulevard	1,057	83	200	PVC2	1989	100	31,077	2089	103,040	69	2,766	-
Lou'S Boulevard	1,058	113	200	PVC2	1989	100	29,263	2089	140,420	69	3,770	-
Lou'S Boulevard	1,059	107	200	PVC2	1989	100	24,349	2089	133,570	69	3,586	-
Lou'S Boulevard	1,060	63	200	PVC2	1989	100	13,527	2089	78,250	69	2,101	-
Lou Hilt'S Cres.	1,061	89	200	PVC2	1989	100	48,919	2089	110,890	69	2,977	-
Lou'S Blvd. (Retention-Pond)	1,062	58	200	PVC2	1989	100	9,221	2089	71,890	69	1,930	-
Christie Street	1,063	53	200	PVC2	1990	100	48,202	2090	66,040	70	1,761	-
Christie Street	1,064	44	200	PVC2	1990	100	47,594	2090	54,950	70	1,465	-
Christie Street	1,065	25	200	PVC2	1990	100	11,926	2090	30,530	70	814	-
Christie Street	1,066	89	200	PVC2	1990	100	53,447	2090	110,390	70	2,944	-
Christie Street	1,067	17	200	PVC2	1990	100	165,641	2090	20,810	70	555	-
Christie Street	1,068	87	200	PVC2	1990	100	8,172	2090	108,780	70	2,901	-
Christie Street	1,069	86	200	PVC2	1990	100	50,410	2090	107,400	70	2,864	-

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Christie Street	1,070	22	200	PVC2	1990	100	51,790	2090	26,910	70	718	-
Christie Street	1,071	97	200	PVC2	1990	100	11,761	2090	120,610	70	3,216	-
Christie Loop	1,072	300	200	PVC2	1990	100	63,441	2090	373,800	70	9,968	-
Landrex Boulevard	1,073	15	200	PVC2	1990	100	19,214	2090	18,440	70	492	-
Landrex Boulevard	1,074	91	200	PVC2	1990	100	4,804	2090	113,760	70	3,034	-
Landrex Boulevard	1,075	94	200	PVC2	1990	100	27,828	2090	116,870	70	3,117	-
Princess Street	1,076	21	200	PVC2	1990	100	49,527	2090	26,540	70	708	-
Princess Street	1,077	115	200	PVC2	1990	100	57,367	2090	143,160	70	3,818	-
Princess Street	1,078	35	200	PVC2	1990	100	10,244	2090	43,360	70	1,156	-
Princess Street	1,079	9	200	PVC2	1990	100	17,625	2090	10,840	70	289	-
Gzowsky Street	1,080	50	200	PVC2	1990	100	37,217	2090	62,800	70	1,675	-
Gzowsky Street	1,081	90	200	PVC2	1990	100	13,643	2090	111,770	70	2,981	-
Queen Street	1,082	104	200	PVC2	1990	100	44,554	2090	129,460	70	3,452	-
Cobblestone Place	1,083	23	200	PVC2	1992	100	33,728	2092	28,530	72	751	-
Cobblestone Place	1,084	39	200	PVC2	1992	100	32,431	2092	49,090	72	1,292	-
Cobblestone Place	1,085	83	200	PVC2	1992	100	31,089	2092	103,670	72	2,729	-
Cobblestone Place	1,086	31	200	PVC2	1992	100	44,732	2092	38,000	72	1,000	-
Cobblestone Place	1,087	100	200	PVC2	1992	100	16,864	2092	124,100	72	3,267	-
Cobblestone Place	1,088	75	200	PVC2	1992	100	17,893	2092	93,950	72	2,473	-
Cobblestone Place	1,089	73	200	PVC2	1992	100	38,649	2092	90,330	72	2,378	-
Cobblestone Place	1,090	70	200	PVC2	1992	100	32,028	2092	86,600	72	2,280	-
Cobblestone Place	1,091	100	200	PVC2	1992	100	19,548	2092	124,600	72	3,280	-
Cobblestone Place	1,092	38	200	PVC2	1992	100	17,625	2092	46,970	72	1,237	-
Cobblestone Place	1,093	40	200	PVC2	1992	100	34,981	2092	49,840	72	1,312	-
Cobblestone Place	1,094	86	200	PVC2	1992	100	16,104	2092	107,650	72	2,834	-
Cobblestone Place	1,095	72	200	PVC2	1992	100	43,428	2092	89,210	72	2,349	-
Cobblestone Place	1,096	44	200	PVC2	1992	100	43,428	2092	54,450	72	1,433	-
Cobblestone Place	1,097	39	200	PVC2	1992	100	43,428	2092	49,090	72	1,292	-
Cobblestone Place	1,098	78	200	PVC2	1992	100	20,704	2092	97,440	72	2,565	-
Cobblestone Place	1,099	36	200	PVC2	1992	100	30,804	2092	44,860	72	1,181	-
Bernardi Crescent	1,100	86	200	PVC2	1998	100	22,219	2098	107,160	78	2,725	-
Bernardi Crescent	1,101	86	200	PVC2	1998	100	20,199	2098	107,160	78	2,725	-
Bernardi Crescent	1,102	86	200	PVC2	1998	100	7,575	2098	107,160	78	2,725	-
Bernardi Crescent	1,103	41	200	PVC2	1998	100	26,259	2098	51,090	78	1,299	-

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Bernardi Crescent	1,104	61	200	PVC2	1998	100	25,754	2098	76,010	78	1,933	-
May Street	1,105	44	200	PVC2	1998	100	43,966	2098	54,820	78	1,394	-
May Street	1,106	40	200	PVC2	1998	100	4,655	2098	49,840	78	1,267	-
May Street	1,107	15	200	PVC2	1998	100	43,449	2098	18,690	78	475	-
May Street	1,108	52	200	PVC2	1998	100	81,208	2098	64,790	78	1,647	-
Fountain Street	1,109	51	200	PVC2	1998	100	11,897	2098	63,550	78	1,616	-
Ridge Road	1,110	63	250	PVC2	1999	100	32,328	2099	77,870	79	1,969	-
Ridge Road	1,111	45	200	PVC2	1999	100	23,276	2099	56,070	79	1,418	-
Ridge Road	1,112	34	200	PVC2	1999	100	17,586	2099	42,360	79	1,071	-
Ridge Road	1,113	57	200	PVC2	1999	100	29,483	2099	71,020	79	1,796	-
Ridge Road	1,114	15	200	PVC2	1999	100	7,759	2099	18,690	79	473	-
Jollifee Avenue	1,115	20	200	PVC2	1999	100	10,345	2099	24,920	79	630	-
Jollifee Avenue	1,116	40	200	PVC2	1999	100	20,690	2099	49,840	79	1,261	-
Jollifee Avenue	1,117	55	200	PVC2	1999	100	28,449	2099	68,530	79	1,733	-
Jollifee Avenue	1,118	90	200	PVC2	1999	100	46,552	2099	112,140	79	2,836	-
Jollifee Avenue	1,119	37	200	PVC2	1999	100	19,138	2099	46,100	79	1,166	-
Jollifee Avenue	1,120	99	200	PVC2	1999	100	51,208	2099	123,350	79	3,120	-
Parkview Lane	1,121	47	200	PVC2	1999	100	24,052	2099	57,940	79	1,465	-
Parkview Lane	1,122	45	200	PVC2	1999	100	23,018	2099	55,450	79	1,402	-
Parkview Lane	1,123	47	200	PVC2	1999	100	24,311	2099	58,560	79	1,481	-
Parkview Lane	1,124	46	200	PVC2	1999	100	23,793	2099	57,320	79	1,450	-
Academy Place	1,125	70	200	PVC2	1999	100	36,207	2099	87,220	79	2,206	-
Academy Place	1,126	47	200	PVC2	1999	100	24,311	2099	58,560	79	1,481	-
Dunbar Street	1,127	24	200	PVC2	1999	100	12,155	2099	29,280	79	741	-
Dunbar Street	1,128	78	200	PVC2	1999	100	40,345	2099	97,190	79	2,458	-
Dunbar Street	1,129	43	200	PVC2	1999	100	21,983	2099	52,950	79	1,339	-
Riverwalk Place	1,130	43	200	PVC2	1999	100	22,242	2099	53,580	79	1,355	-
Riverwalk Place	1,131	13	200	PVC2	1999	100	6,724	2099	16,200	79	410	-
Riverwalk Place	1,132	40	200	PVC2	1999	100	20,690	2099	49,840	79	1,261	-
Riverwalk Place	1,133	32	200	PVC2	1999	100	16,552	2099	39,870	79	1,008	-
Riverwalk Place	1,134	13	200	PVC2	1999	100	6,724	2099	16,200	79	410	-
Riverwalk Place	1,135	16	200	PVC2	1999	100	8,276	2099	19,940	79	504	-
Riverwalk Place	1,136	67	200	PVC2	1999	100	34,656	2099	83,480	79	2,111	-
Riverwalk Place	1,137	9	200	PVC2	1999	100	4,655	2099	11,210	79	284	-
Riverwalk Place	1,138	9	200	PVC2	1999	100	4,655	2099	11,210	79	284	-

Street	Asset ID	Length (m)	Diameter (mm)	Material	Year Installed	Estimated Life	Historical Cost	Replacement Year	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Riverwalk Place	1,139	56	200	PVC2	1999	100	28,966	2099	69,780	79	1,765	-
Riverwalk Place	1,140	24	200	PVC2	1999	100	12,414	2099	29,900	79	756	-
Riverwalk Place	1,141	30	200	PVC2	1999	100	15,259	2099	36,760	79	930	-
Riverwalk Place	1,142	25	200	PVC2	1999	100	12,931	2099	31,150	79	788	-
Riverwalk Place	1,143	41	200	PVC2	1999	100	21,207	2099	51,090	79	1,292	-
Dundar Street	1,144	272	200	PVC2	2001	100	158,145	2101	338,660	81	8,478	-
Dundar Street	1,145	113	200	PVC2	2003	100	69,084	2103	140,170	83	3,475	-
Ridge Road	1,146	217	200	PVC2	2001	100	125,969	2101	269,760	81	6,753	-
Ridge Road	1,147	276	200	PVC2	2003	100	169,486	2103	343,890	83	8,526	-
Ridge Road	1,148	131	200	PVC2	2004	100	85,412	2104	162,600	84	4,012	-
Old Maple Boulevard	1,149	120	200	PVC2	2001	100	69,821	2101	149,520	81	3,743	-
Old Maple Boulevard	1,150	195	200	PVC2	2003	100	119,745	2103	242,970	83	6,024	-
Scots Lane	1,151	124	200	PVC2	2001	100	72,381	2101	155,000	81	3,880	-
Scots Lane	1,152	56	200	PVC2	2003	100	34,388	2103	69,780	83	1,730	-
Milne Place	1,153	309	200	PVC2	2004	100	202,501	2104	385,510	84	9,513	-
Jolliffe Avenue	1,154	37	200	PVC2	2004	100	24,413	2104	46,480	84	1,147	-
Maclennan Street	1,155	388	200	PVC2	2004	100	253,683	2104	482,950	84	11,917	-
Parkinson Drive	1,156	340	200	PVC2	2004	100	222,660	2104	423,890	84	10,460	-
Hayward Court	1,157	207	200	PVC2	2004	100	135,350	2104	257,670	84	6,358	-
May Street	1,158	252	200	PVC2	2004	100	164,933	2104	313,990	84	7,748	-
Gamble Lane	1,159	232	200	PVC2	2004	100	152,105	2104	289,570	84	7,145	-
Wheeler Court	1,160	154	200	PVC2	2004	100	100,465	2104	191,260	84	4,719	-
Fountain Street	1,161	83	200	PVC2	2004	100	54,520	2104	103,790	84	2,561	-
Jolliffe Avenue	1,162	10	200	PVC2	2006	100	7,353	2106	12,460	86	305	-
Jolliffe Avenue	1,163	36	200	PVC2	2006	100	26,472	2106	44,860	86	1,097	-
Jolliffe Avenue	1,164	56	200	PVC2	2006	100	41,178	2106	69,780	86	1,706	-
Jolliffe Avenue	1,165	32	200	PVC2	2006	100	23,163	2106	39,250	86	960	-
Jolliffe Avenue	1,166	18	200	PVC2	2006	100	13,236	2106	22,430	86	548	-
Jolliffe Avenue	1,167	66	200	PVC2	2006	100	48,164	2106	81,610	86	1,996	-
Jolliffe Avenue	1,168	23	200	PVC2	2006	100	16,912	2106	28,660	86	701	-
Jolliffe Avenue	1,169	106	200	PVC2	2006	100	77,945	2106	132,080	86	3,230	-
Ridge Top Crescent	1,170	87	200	PVC2	2006	100	63,973	2106	108,400	86	2,651	-
Ridge Top Crescent	1,171	200	200	PVC2	2006	100	147,065	2106	249,200	86	6,094	-

Street	Asset ID	Length (m)	Diameter (mm)	Material	Year Installed	Estimated Life	Historical Cost	Replacement Year	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Ridge Top Crescent	1,172	42	200	PVC2	2006	100	30,884	2106	52,330	86	1,280	-
Ridge Top Crescent	1,173	175	200	PVC2	2006	100	128,682	2106	218,050	86	5,332	-
Hampson Crescent	1,174	83	200	PVC2	2006	100	60,664	2106	102,790	86	2,514	-
Hampson Crescent	1,175	178	200	PVC2	2006	100	130,888	2106	221,790	86	5,424	-
Easement Through Block 42 To Main Street	1,179	80	200	PVC2	2006	100	58,826	2106	99,680	86	2,438	-
Millview Court	1,180	183	200	PVC2	2007	100	143,634	2107	228,020	87	5,552	-
Millview Court (Sewer Easement)	1,181	45	200	PVC2	2007	100	35,320	2107	56,070	87	1,365	-
Gravity Sewer To Guelph	1,183	7,000	200	PVC	1975	60	1,570,259	2035	8,721,940	15	678,789	-
Total		**28,077**							**34,983,700**		**1,506,131**	**874,990**

Table C-4
Township of Guelph/Eramosa
Wastewater Forcemains

Street	Asset ID	Length (m)	Diameter (mm)	Material	Year Installed	Estimated Life	Replacement Year	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Main Street Forcemain*	1189	408.7	150	PE	1975	50	2025				
Ridge Road Forcemain	New Add	157.0	138	PE	1999	61	2060	211,580	40	7,734	-
Lou's Blvd. Forcemain	1190	290.0	100	PE	1989	50	2039	235,090	19	14,994	-
Valley Road Forcemain	1191	1,350.0	150	PE	1999	40	2039	940,370	19	59,978	-
MacLennan Forcemain	2555	498.5	150	PE	2010	50	2060	387,900	40	14,180	-
Rockmosa Forcemain			100	PE	2019	50	2069	387,900	49	12,492	-
Total								**2,162,840**		**109,379**	**0**
*This forcemain is obsolete and will not be replaced in the future											

Table C-5
Township of Guelph/Eramosa
Wastewater Manholes

Location	Asset ID	Number of Manholes	Year Installed	Estimated Life	Replacement Year	Total Hydrant Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Various	1923	102	1976	60	2036	479,590	16	35,322	-
Harris St.	1923	8	1976	42	2020	37,610	0	suggested for 10 year capital forecast	37,610
Various	1923	17	1985	60	2045	79,930	25	4,094	-
Various	1923	5	1987	60	2047	23,510	27	1,135	-
Various	1923	12	1989	60	2049	56,420	29	2,583	-
Various	1937	20	1990	60	2050	94,040	30	4,199	-
Various	1937	21	1992	60	2052	98,740	32	-	-
Various	1937	9	1998	60	2058	42,320	38	-	-
Various	1937	38	1999	60	2059	178,670	39	-	-
Various	1937	12	2001	60	2061	56,420	41	-	-
Various	1937	10	2003	60	2063	47,020	43	-	-
Various	1951	39	2004	60	2064	183,370	44	-	-
Various	1951	22	2006	60	2066	103,440	46	-	-
Various	1951	8	2007	60	2067	37,610	47	1,242	-
Total						**1,518,690**		**48,575**	**37,610**

Appendix D
Water and Wastewater System – Gazer-Mooney Inventory Data

Appendix D: Water and Wastewater System – Gazer-Mooney Inventory Data

Table D-1
Township of Guelph/Eramosa
Gazer-Mooney Watermains

Street	Asset ID	Length (m)	Diameter (mm)	Material	Year Installed	Estimated Life	Replacement Year	Total Main Replacement Costs (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Promenade Rd.	1193	300	150	PVC2	1980	100	2080	215,600	60	6,202	-
Eramosa Cres.	1194	200	150	PVC2	1980	100	2080	143,740	60	4,135	-
Hillside Dr.	1195	100	150	PVC2	1980	100	2080	71,870	60	2,068	-
Gazer Cr.	1196	200	150	PVC2	1980	100	2080	143,740	60	4,135	-
Speedvale Ave.	1197	500	150	PVC2	1980	100	2080	359,350	60	10,338	-
Total		**1,300**						**934,300**		**26,878**	**0**

Table D-2
Township of Guelph/Eramosa
Gazer-Mooney Wastewater Facilities

Item	Asset ID	Capacity	Year Installed	In-Service Date	Estimated Life	Replacement Year	Replacement Cost (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Gazer-Mooney Pumping Station:	1548		1980							
- Building			1980		50	2030	94,040	10	suggested for 10 year capital forecast	94,040
- Roof			2016		40	2056	14,110	36	554	-
- Wet Well			1980		60	2040	329,130	20	20,129	-
- Valve Chamber			1995		60	2055	70,530	35	2,821	-
- Piping			1980		50	2030	94,040	10	suggested for 10 year capital forecast	94,040
- Electrical and Controls			1980		50	2030	141,060	10	suggested for 10 year capital forecast	141,060
Total							**742,910**		**23,503**	**329,140**

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Table D-3
Township of Guelph/Eramosa
Gazer-Mooney Wastewater Forcemains

Street	Asset ID	Length (km)	Length (m)	Diameter (mm)	Material	Year Installed	Estimated Life	Replacement Year	Total Main Replacement Costs	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Speedvale Avenue Forcemain	1192		500	100	PVC2	1980	100	2080	620,500	60	17,851	-
Total			**500**						**620,500**		**17,851**	**0**

Table D-4
Township of Guelph/Eramosa
Gazer-Mooney Wastewater Sanitary Sewers

Street	Asset ID	Length (m)	Diameter (mm)	Material	Year Installed	Estimated Life	Replacement Year	Total Main Replacement Costs (2020$)	Years until Replacement	Annual Lifecycle Contribution	Amount to be included in 10 year Forecast
Promenade Rd.	1184	300	200	PVC2	1980	100	2080	317,380	60	9,130	-
Eramosa Cres.	1185	200	200	PVC2	1980	100	2080	211,580	60	6,087	-
Hillside Dr.	1186	100	200	PVC2	1980	100	2080	105,790	60	3,043	-
Gazer Cr.	1187	200	200	PVC2	1980	100	2080	211,580	60	6,087	-
Speedvale Ave.	1188	500	200	PVC2	1980	100	2080	528,960	60	15,217	-
Total		**1,300**						**1,375,290**		**39,564**	**0**

Appendix E
Detailed Water Rate Calculations

Appendix E: Detailed Water Rate Calculations

Table E-1
Township of Guelph/Eramosa
Capital Budget Forecast (Uninflated $)

Description	Total	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Rockwood											
Capital Expenditures:											
David Masson Park - Gzowski to Christie Watermain Connection	-	-	-	-	-	-	-	-	-	-	-
Shanley Street - Dowler to Main St. W/M connection	60,000	-	-	-	60,000	-	-	-	-	-	-
Rockwood Cemetery - Academy to George Ware Lane W/M connection	125,000	-	-	-	-	-	-	-	125,000	-	-
Lifecycle:	-	-	-	-	-	-	-	-	-	-	-
Rockwood Booster - High lift Pump Replacement	12,000	-	-	12,000	-	-	-	-	-	-	-
Rockwood Booster - Replace controls (MCC/PLC)	100,000	-	-	-	-	-	-	100,000	-	-	-
Station St Wells - Replace Well Pumps (high lift)	24,000	-	-	-	-	24,000	-	-	-	-	-
Station St Wells - Replace well Piping	20,000	-	-	-	-	20,000	-	-	-	-	-
Station St Wells - Clean/airlift wells	20,000	-	-	-	-	20,000	-	-	-	-	-
Station St. Pumphouse - Rebuild UV disinfection system	50,000	-	-	50,000	-	-	-	-	-	-	-
Station St. Pumphouse - Replace PRV	12,000	-	-	-	-	12,000	-	-	-	-	-
Station St. Pumphouse - Rebuild/replace controls	80,000	-	-	-	-	80,000	-	-	-	-	-
Station St. Pumphouse - Replace roof	12,000	-	-	-	-	-	12,000	-	-	-	-
Station St. Pumphouse - Replace turbity analyzer	7,000	-	-	-	-	-	-	7,000	-	-	-
Station St. Pumphouse - Replace flow meter	14,000	-	-	-	-	-	-	-	-	14,000	-
Bernardi Well - Replace Well Pump (low lift)	12,000	-	-	-	-	12,000	-	-	-	-	-
Bernardi Well - Replace well Piping	10,000	-	-	-	-	10,000	-	-	-	-	-
Bernardi Well - Clean/airlift well	10,000	-	-	-	-	10,000	-	-	-	-	-
Bernardi Pumphouse - Replace High lift pumps with VFD	24,000	-	-	-	-	24,000	-	-	-	-	-
Alma Street - Inkerman to Pasmore W/m replacement	-	-	-	-	-	-	-	-	-	-	-
SCADA	200,000	100,000	100,000	-	-	-	-	-	-	-	-
Fleet - Unit 117 - 2020 replacement	-	-	-	-	-	-	-	-	-	-	-
Fleet - Unit 118 - 2022 replacement	27,000	-	27,000	-	-	-	-	-	-	-	-
Fleet - Unit 123 - 2016 in service - 2026 Replacement	34,500	-	-	-	-	-	34,500	-	-	-	-
Fleet - Unit 127 - 2018 in service - 2028 Replacement	33,500	-	-	-	-	-	-	-	33,500	-	-
Studies:	-	-	-	-	-	-	-	-	-	-	-
Studies - Water/Wastewater Rate Study	35,000	-	-	-	-	35,000	-	-	-	-	-
Studies - Station Street GUDI Review	-	-	-	-	-	-	-	-	-	-	-
Growth Related:	-	-	-	-	-	-	-	-	-	-	-
Catherine Street - Railway watermain crossing (From budget)	430,000	-	430,000	-	-	-	-	-	-	-	-
Fleet - New unit for new 2021 Staff (From Budget)	35,000	35,000	-	-	-	-	-	-	-	-	-
Milne Pumphouse - Completion of 2019 construction	-	-	-	-	-	-	-	-	-	-	-
Water and Wastewater Master Servicing Study	15,000	-	-	15,000	-	-	-	-	-	-	-
Hamilton Drive											
Capital Expenditures:											
Hamilton Drive Standpipe - New storage shed & backup power	50,000	-	-	-	50,000	-	-	-	-	-	-
Pandora Drive - Bedford to Woodfield W/M looping	82,500	-	-	-	-	82,500	-	-	-	-	-
Lifecycle:	-	-	-	-	-	-	-	-	-	-	-
Hamilton Drive Standpipe - Clean and Seal tank, anode replacement	65,000	-	-	-	-	-	65,000	-	-	-	-
Huntington Wells - Replace Well Pump (low lift)	12,000	-	-	-	-	12,000	-	-	-	-	-
Huntington Wells - Replace well Piping	10,000	-	-	-	-	10,000	-	-	-	-	-
Huntington Wells - Clean/airlift well	10,000	-	-	-	-	10,000	-	-	-	-	-
Huntington Pumphouse - Replace High lift pumps with VFD	24,000	-	-	-	-	24,000	-	-	-	-	-
Huntington Pumphouse - Replace flow meter	10,000	-	-	-	-	-	-	-	-	10,000	-
Huntington Pumphouse - Replace asphlat shingle roof with Steel	12,000	-	-	-	-	-	-	12,000	-	-	-
Cross Creek Wells - Replace Well Pump (low lift)	12,000	-	-	-	-	12,000	-	-	-	-	-
Cross Creek Wells - Replace well Piping	10,000	-	-	-	-	10,000	-	-	-	-	-
Cross Creek Wells - Clean/airlift well	10,000	-	-	-	-	10,000	-	-	-	-	-
Cross Creek Pumphouse - Replace High lift pumps with VFD	24,000	-	-	-	-	24,000	-	-	-	-	-
Cross Creek Pumphouse - Replace flow meter	10,000	-	-	-	-	-	-	-	-	10,000	-
Cross Creek Pumphouse - Replace asphlat shingle roof with Steel	12,000	-	-	-	-	-	-	12,000	-	-	-
Total Capital Expenditures	**1,755,500**	**135,000**	**557,000**	**77,000**	**110,000**	**441,500**	**111,500**	**131,000**	**158,500**	**34,000**	**-**

Table C-2
Township of Guelph/Eramosa
Capital Budget Forecast (Inflated $)

Description	Total	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Rockwood											
Capital Expenditures:	-	-	-	-	-	-	-	-	-	-	-
David Masson Park - Gzowski to Christie Watermain Connection	-	-	-	-	-	-	-	-	-	-	-
Shanley Street - Dowler to Main St. W/M connection	65,000	-	-	-	65,000	-	-	-	-	-	-
Rockwood Cemetery - Academy to George Ware Lane W/M connection	146,000	-	-	-	-	-	-	-	146,000	-	-
Lifecycle:	-	-	-	-	-	-	-	-	-	-	-
Rockwood Booster - High lift Pump Replacement	13,000	-	-	13,000	-	-	-	-	-	-	-
Rockwood Booster - Replace controls (MCC/PLC)	115,000	-	-	-	-	-	-	115,000	-	-	-
Station St Wells - Replace Well Pumps (high lift)	26,000	-	-	-	-	26,000	-	-	-	-	-
Station St Wells - Replace well Piping	22,000	-	-	-	-	22,000	-	-	-	-	-
Station St Wells - Clean/airlift wells	22,000	-	-	-	-	22,000	-	-	-	-	-
Station St. Pumphouse - Rebuild UV disinfection system	53,000	-	-	53,000	-	-	-	-	-	-	-
Station St. Pumphouse - Replace PRV	13,000	-	-	-	-	13,000	-	-	-	-	-
Station St. Pumphouse - Rebuild/replace controls	88,000	-	-	-	-	88,000	-	-	-	-	-
Station St. Pumphouse - Replace roof	14,000	-	-	-	-	-	14,000	-	-	-	-
Station St. Pumphouse - Replace turbity analyzer	8,000	-	-	-	-	-	-	8,000	-	-	-
Station St. Pumphouse - Replace flow meter	17,000	-	-	-	-	-	-	-	-	17,000	-
Bernardi Well - Replace Well Pump (low lift)	13,000	-	-	-	-	13,000	-	-	-	-	-
Bernardi Well - Replace well Piping	11,000	-	-	-	-	11,000	-	-	-	-	-
Bernardi Well - Clean/airlift well	11,000	-	-	-	-	11,000	-	-	-	-	-
Bernardi Pumphouse - Replace High lift pumps with VFD	26,000	-	-	-	-	26,000	-	-	-	-	-
Alma Street - Inkerman to Pasmore W/m replacement	-	-	-	-	-	-	-	-	-	-	-
SCADA	206,000	102,000	104,000	-	-	-	-	-	-	-	-
Fleet - Unit 117 - 2020 replacement	-	-	-	-	-	-	-	-	-	-	-
Fleet - Unit 118 - 2022 replacement	28,000	-	28,000	-	-	-	-	-	-	-	-
Fleet - Unit 123 - 2016 in service - 2026 Replacement	39,000	-	-	-	-	-	39,000	-	-	-	-
Fleet - Unit 127 - 2018 in service - 2028 Replacement	39,000	-	-	-	-	-	-	-	39,000	-	-
Studies:	-	-	-	-	-	-	-	-	-	-	-
Studies - Water/Wastewater Rate Study	39,000	-	-	-	-	39,000	-	-	-	-	-
Studies - Station Street GUDI Review	-	-	-	-	-	-	-	-	-	-	-
Growth Related:	-	-	-	-	-	-	-	-	-	-	-
Catherine Street - Railway watermain crossing (From budget)	447,000	-	447,000	-	-	-	-	-	-	-	-
Fleet - New unit for new 2021 Staff (From Budget)	36,000	36,000	-	-	-	-	-	-	-	-	-
Milne Pumphouse - Completion of 2019 construction	-	-	-	-	-	-	-	-	-	-	-
Water and Wastewater Master Servicing Study	16,000	-	-	16,000	-	-	-	-	-	-	-
Hamilton Drive											
Capital Expenditures:	-	-	-	-	-	-	-	-	-	-	-
Hamilton Drive Standpipe - New storage shed & backup power	54,000	-	-	-	54,000	-	-	-	-	-	-
Pandora Drive - Bedford to Woodfield W/M looping	91,000	-	-	-	-	91,000	-	-	-	-	-
Lifecycle:	-	-	-	-	-	-	-	-	-	-	-
Hamilton Drive Standpipe - Clean and Seal tank, anode replacement	73,000	-	-	-	-	-	73,000	-	-	-	-
Huntington Wells - Replace Well Pump (low lift)	13,000	-	-	-	-	13,000	-	-	-	-	-
Huntington Wells - Replace well Piping	11,000	-	-	-	-	11,000	-	-	-	-	-
Huntington Wells - Clean/airlift well	11,000	-	-	-	-	11,000	-	-	-	-	-
Huntington Pumphouse - Replace High lift pumps with VFD	26,000	-	-	-	-	26,000	-	-	-	-	-
Huntington Pumphouse - Replace flow meter	12,000	-	-	-	-	-	-	-	-	12,000	-
Huntington Pumphouse - Replace asphlat shingle roof with Steel	14,000	-	-	-	-	-	-	14,000	-	-	-
Cross Creek Wells - Replace Well Pump (low lift)	13,000	-	-	-	-	13,000	-	-	-	-	-
Cross Creek Wells - Replace well Piping	11,000	-	-	-	-	11,000	-	-	-	-	-
Cross Creek Wells - Clean/airlift well	11,000	-	-	-	-	11,000	-	-	-	-	-
Cross Creek Pumphouse - Replace High lift pumps with VFD	26,000	-	-	-	-	26,000	-	-	-	-	-
Cross Creek Pumphouse - Replace flow meter	12,000	-	-	-	-	-	-	-	-	12,000	-
Cross Creek Pumphouse - Replace asphlat shingle roof with Steel	14,000	-	-	-	-	-	-	14,000	-	-	-
Total Capital Expenditures	**1,905,000**	**138,000**	**579,000**	**82,000**	**119,000**	**484,000**	**126,000**	**151,000**	**185,000**	**41,000**	**-**
Capital Financing											
Provincial/Federal Grants	-										
Development Charges Reserve Fund	405,168	32,400	356,768	16,000	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-
Lifecycle Reserve Fund	1,104,832	105,600	222,232	66,000	-	354,000	126,000	151,000	39,000	41,000	-
Water Reserve	395,000	-	-	-	119,000	130,000	-	-	146,000	-	-
Total Capital Financing	**1,905,000**	**138,000**	**579,000**	**82,000**	**119,000**	**484,000**	**126,000**	**151,000**	**185,000**	**41,000**	**-**

Table C-3
Township of Guelph/Eramosa
Schedule of Non-Growth Related Debenture Repayments

Debenture Year	Principal (Inflated)	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2021	-		-	-	-	-	-	-	-	-	-
2022	-			-	-	-	-	-	-	-	-
2023	-				-	-	-	-	-	-	-
2024	-					-	-	-	-	-	-
2025	-						-	-	-	-	-
2026	-							-	-	-	-
2027	-								-	-	-
2028	-									-	-
2029	-										-
2030	-										
Total Annual Debt Charges	**-**	-	-	-	-	-	-	-	-	-	-

Table C-4
Township of Guelph/Eramosa
Schedule of Growth Related Debenture Repayments

Debenture Year	Principal (Inflated)	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2021	-		-	-	-	-	-	-	-	-	-
2022	-			-	-	-	-	-	-	-	-
2023	-				-	-	-	-	-	-	-
2024	-					-	-	-	-	-	-
2025	-						-	-	-	-	-
2026	-							-	-	-	-
2027	-								-	-	-
2028	-									-	-
2029	-										-
2030	-										
Total Annual Debt Charges	**-**	-	-	-	-	-	-	-	-	-	-

Table C-5
Township of Guelph/Eramosa
Water Operating Reserve Continuity (Inflated $)

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	92,591	102,591	112,591	122,591	132,591	142,591	152,591	162,591	172,591	182,591
Transfer from Operating	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Transfer to Capital	-	-	-	-	-	-	-	-	-	-
Loan Repayment to Lifecycle Reserve	-	-	-	-	-	-	-	-	-	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Closing Balance	**102,591**	**112,591**	**122,591**	**132,591**	**142,591**	**152,591**	**162,591**	**172,591**	**182,591**	**192,591**
Interest										

Table C-6
Township of Guelph/Eramosa
Water Capital Reserve Fund Continuity (Inflated $)

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	217,975	351,472	511,292	677,814	729,442	796,219	1,021,461	1,261,764	1,368,401	1,636,050
Transfer from Operating	125,327	147,934	150,766	153,671	178,268	201,496	210,971	220,826	229,616	238,249
Transfer to Capital				119,000	130,000			146,000		
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Closing Balance	**343,302**	**499,406**	**662,057**	**712,485**	**777,710**	**997,716**	**1,232,432**	**1,336,590**	**1,598,017**	**1,874,298**
Interest	8,171	11,886	15,757	16,957	18,509	23,746	29,332	31,811	38,033	44,608

Table C-7
Township of Guelph/Eramosa
Water Development Charges Reserve Fund Continuity (Inflated $)

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	84,780	372,008	168,913	201,447	175,715	545,309	528,969	512,861	497,005	464,494
Development Charge Proceeds	369,983	208,749	102,854	29,187	415,920	30,366	30,973	31,593	15,694	16,008
Transfer from Operating (interim loan from Wastewater D.C. Reserve Fund)										
Transfer to Capital	32,400	356,768	16,000	-	-	-	-	-	-	-
Transfer to Operating (to Wastewater D.C. Reserve Fund)	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Closing Balance	**363,360**	**164,986**	**196,764**	**171,631**	**532,633**	**516,672**	**500,939**	**485,451**	**453,696**	**421,498**
Interest	8,648	3,927	4,683	4,085	12,677	12,297	11,922	11,554	10,798	10,032
Required from Development Charges	32,400	356,768	16,000	-	-	-	-	-	-	-

Table C-8
Township of Guelph/Eramosa
Water Lifecycle Reserve Fund Continuity (Inflated $)

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	538,639	669,931	713,032	947,831	1,284,650	1,299,406	1,583,372	1,885,324	2,348,872	2,863,838
Transfer from Operating	221,318	248,757	278,764	306,955	338,550	373,157	409,124	447,945	489,391	533,761
Transfer from Water Operating Reserve - Loan Repayment	-	-	-	-	-	-	-	-	-	-
Transfer to Capital	105,600	222,232	66,000	-	354,000	126,000	151,000	39,000	41,000	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Closing Balance	**654,358**	**696,457**	**925,797**	**1,254,786**	**1,269,200**	**1,546,564**	**1,841,496**	**2,294,269**	**2,797,264**	**3,397,599**
Interest	15,574	16,576	22,034	29,864	30,207	36,808	43,828	54,604	66,575	80,863

Table C-9
Township of Guelph/Eramosa
Operating Budget Forecast (Inflated $)

	Forecast									
Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Expenditures										
Operating Costs	-	-	-	-	-	-	-	-	-	-
Advertising	2,000	1,300	1,330	1,360	1,390	1,420	1,450	1,480	1,510	1,540
Communications	10,000	10,200	10,400	10,610	10,820	11,040	11,260	11,490	11,720	11,950
Conservation Initiatives	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Fees - Audit	4,000	4,000	4,000	4,000	4,000	4,080	4,160	4,240	4,320	4,410
Fees - Engineering	40,000	40,800	41,620	42,450	43,300	44,170	45,050	45,950	46,870	47,810
Fees - Legal	500	500	500	500	510	520	530	540	550	560
Fleet	12,000	15,000	15,300	15,610	15,920	16,240	16,560	16,890	17,230	17,570
Grounds Maintenance	2,000	2,000	2,000	2,000	2,000	2,500	2,500	2,500	2,500	2,500
Heating	2,000	2,040	2,080	2,120	2,160	2,200	2,240	2,280	2,330	2,380
Hydro	70,000	71,400	72,800	74,300	75,800	77,300	78,800	80,400	82,000	83,600
Insurance	46,720	47,650	48,600	49,570	50,560	51,570	52,600	53,650	54,720	55,810
Licenses	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Locates	500	500	500	500	500	500	500	500	500	500
Memberships and Dues	1,600	1,630	1,660	1,690	1,720	1,750	1,790	1,830	1,870	1,910
Meter Repairs	1,000	1,000	1,000	1,000	1,000	1,020	1,040	1,060	1,080	1,100
Contracted Services	52,000	53,040	54,100	55,180	56,280	57,410	58,560	59,730	60,920	62,140
Postage & Shipping	14,000	14,280	14,570	14,860	15,160	15,460	15,770	16,090	16,410	16,740
Property Taxes	8,422	8,590	8,762	8,937	9,116	9,299	9,480	9,670	9,860	10,060
Repairs & Maint - Buildings	6,000	6,000	6,000	6,000	6,000	6,120	6,240	6,360	6,490	6,620
Repairs & Maint - Equipment	32,000	32,640	33,290	33,960	34,640	35,330	36,040	36,760	37,500	38,250
Repairs & Maint - Water/WW Mains	31,000	31,000	31,620	32,250	32,900	33,560	34,230	34,910	35,610	36,320
Safety	3,000	3,000	3,000	3,000	3,000	3,060	3,120	3,180	3,240	3,300
Salaries and Wages	408,000	417,000	434,000	451,000	460,020	469,220	478,600	488,170	497,930	507,890
Salaries Benefits	131,000	134,000	139,000	145,000	147,900	150,860	153,880	156,960	160,100	163,300
Seminars & Training	12,000	12,000	12,000	10,000	10,200	10,404	10,612	10,824	11,041	11,262
Service Agreements	6,000	6,120	6,240	6,360	6,490	6,620	6,750	6,890	7,030	7,170
Supplies and Services	60,000	61,200	62,400	63,600	64,900	66,200	67,500	68,900	70,300	71,700
Telephone	3,200	3,260	3,330	3,400	3,470	3,540	3,610	3,680	3,750	3,830
Uniforms	2,500	2,800	2,860	2,920	2,980	3,040	3,100	3,160	3,220	3,280
Water Meter Stock	24,400	15,400	13,000	10,000	25,000	10,200	10,400	10,600	10,800	11,000
Transfer to Operating Reserve	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Indirect Costs Transfer	16,240	18,700	21,100	23,500	25,900	28,350	28,920	29,500	30,090	30,690
Sub Total Operating	**1,014,082**	**1,029,050**	**1,059,062**	**1,087,677**	**1,125,636**	**1,134,983**	**1,157,292**	**1,180,194**	**1,203,491**	**1,227,192**
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	43,128	43,128	43,128	43,128	43,128	43,128	43,128	43,128	43,128	43,128
Existing Debt (Interest) - Non-Growth Related										
New Non-Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Transfer to Capital	-	-	-	-	-	-	-	-	-	-
Transfer to D.C. Reserve Fund (from Wastewater D.C. Reserve Fund)										
Transfer to Wastewater D.C. Reserve Fund (from Water D.C. Reserve Fund)	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003
Transfer to Capital Reserve	125,327	147,934	150,766	153,671	178,268	201,496	210,971	220,826	229,616	238,249
Sub Total Capital Related	**227,458**	**250,065**	**252,897**	**255,802**	**280,399**	**303,627**	**313,102**	**322,957**	**331,747**	**340,380**
Total Expenditures	**1,241,540**	**1,279,115**	**1,311,959**	**1,343,479**	**1,406,035**	**1,438,610**	**1,470,394**	**1,503,151**	**1,535,238**	**1,567,572**
Revenues										
Base Charge	315,745	336,399	355,323	374,037	397,047	421,249	442,312	464,619	487,850	512,243
Penalty and Interest	9,700	9,900	10,100	10,300	10,500	10,700	10,900	11,100	11,300	11,500
Miscellaneous Revenue	15,300	15,600	15,900	16,200	16,500	16,800	17,100	17,400	17,700	18,100
Water Meters	14,400	5,400	3,000	-	15,000	-	-	-	-	-
Transfer from Reserves										
Transfer from Development Charge Reserves										
Contributions from Wastewater D.C. Reserve Fund (interim loan from Wastewater D.C. Reserve Fund)	-	-	-	-	-	-	-	-	-	-
Contributions from Water D.C. Reserve Fund	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003
Contributions from Development Charges Reserve Fund	-	-	-	-	-	-	-	-	-	-
Contributions from Reserves / Reserve Funds	-	-	-	-	-	-	-	-	-	-
Total Operating Revenue	**414,148**	**426,302**	**443,327**	**459,540**	**498,050**	**507,752**	**529,315**	**552,122**	**575,853**	**600,846**
Water Billing Recovery - Operating	**827,392**	**852,813**	**868,632**	**883,940**	**907,985**	**930,858**	**941,079**	**951,029**	**959,385**	**966,726**
Lifecycle Reserve Contribution ($)	221,318	248,757	278,764	306,955	338,550	373,157	409,124	447,945	489,391	533,761
Water Billing Recovery - Total	**1,048,710**	**1,101,570**	**1,147,397**	**1,190,895**	**1,246,535**	**1,304,015**	**1,350,204**	**1,398,974**	**1,448,776**	**1,500,487**

Table C-10
Township of Guelph/Eramosa
Water Rate Forecast (Inflated $)

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total Water Billing Recovery	**1,048,710**	**1,101,570**	**1,147,397**	**1,190,895**	**1,246,535**	**1,304,015**	**1,350,204**	**1,398,974**	**1,448,776**	**1,500,487**
Rockwood Metered Volume (m^3)	337,999	343,439	345,479	346,329	350,579	354,829	354,829	354,829	354,829	354,829
Hamilton Drive Metered Volume (m^3)	47,303	47,742	48,182	48,402	48,622	48,622	48,622	48,842	48,842	48,842
Rockwood Volume Rate	**2.62**	**2.72**	**2.83**	**2.94**	**3.06**	**3.18**	**3.30**	**3.43**	**3.57**	**3.71**
Hamilton Drive Volume Rate	**3.45**	**3.49**	**3.52**	**3.56**	**3.59**	**3.63**	**3.67**	**3.70**	**3.74**	**3.78**
Annual Dollar Change - Rockwood	**0.10**	**0.10**	**0.11**	**0.11**	**0.12**	**0.12**	**0.13**	**0.13**	**0.14**	**0.14**
Annual Dollar Change - Hamilton Drive	**0.03**	**0.03**	**0.03**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**	**0.04**

Appendix F
Detailed Wastewater Rate Calculations

Appendix F: Detailed Wastewater Rate Calculations

Table F-1
Township of Guelph/Eramosa
Capital Budget Forecast (Uninflated $)

Description	Total	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Capital Expenditures:											
Valley Road SPS - New Expanded Wetwell	750,000								50,000	700,000	
Lifecycle:	-										
Alma Pretreatment - Replace Transmission Pumps	25,000					25,000					
Valley Road SPS - Replace Sewage Pumps	160,000									160,000	
Mill Run SPS - Replace Pump 1	27,000	27,000									
Mill Run SPS - Replace piping	60,000									60,000	
Ridge Road SPS - Replace internal piping	60,000	60,000									
Skyway Monitoring Station - Replace H2S Monitor	15,000		15,000								
Guelph Forcemain - Replace 400 m from plant	500,000				50,000	450,000					
SCADA	100,000			100,000							
Fleet - Unit 117 - 2020 replacement	-										
Fleet - Unit 118 - 2022 replacement	13,000		13,000								
Fleet - Unit 123 - 2016 in service - 2026 Replacement	17,500						17,500				
Fleet - Unit 127 - 2018 in service - 2028 Replacement	16,500								16,500		
Growth Related:	-										
Sanitary Inflow Investigation (Smoke testing)	45,000		45,000								
Water and Wastewater Master Servicing Study	15,000			15,000							
Total Capital Expenditures	**1,804,000**	**87,000**	**73,000**	**115,000**	**50,000**	**475,000**	**17,500**	**-**	**66,500**	**920,000**	**-**

Table F-2
Township of Guelph/Eramosa
Capital Budget Forecast (Inflated $)

Description	Total	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Capital Expenditures											
Valley Road SPS - New Expanded Wetwell	896,000	-	-	-	-	-	-	-	59,000	837,000	-
Lifecycle:	-	-	-	-	-	-	-	-	-	-	-
Alma Pretreatment - Replace Transmission Pumps	28,000	-	-	-	-	28,000	-	-	-	-	-
Valley Road SPS - Replace Sewage Pumps	191,000	-	-	-	-	-	-	-	-	191,000	-
Mill Run SPS - Replace Pump 1	28,000	28,000	-	-	-	-	-	-	-	-	-
Mill Run SPS - Replace piping	72,000	-	-	-	-	-	-	-	-	72,000	-
Ridge Road SPS - Replace internal piping	61,000	61,000	-	-	-	-	-	-	-	-	-
Skyway Monitoring Station - Replace H2S Monitor	16,000	-	16,000	-	-	-	-	-	-	-	-
Guelph Forcemain - Replace 400 m from plant	551,000	-	-	-	54,000	497,000	-	-	-	-	-
SCADA	106,000	-	-	106,000	-	-	-	-	-	-	-
Fleet - Unit 117 - 2020 replacement	-	-	-	-	-	-	-	-	-	-	-
Fleet - Unit 118 - 2022 replacement	14,000	-	14,000	-	-	-	-	-	-	-	-
Fleet - Unit 123 - 2016 in service - 2026 Replacement	20,000	-	-	-	-	-	20,000	-	-	-	-
Fleet - Unit 127 - 2018 in service - 2028 Replacement	19,000	-	-	-	-	-	-	-	19,000	-	-
Growth Related:	-	-	-	-	-	-	-	-	-	-	-
Sanitary Inflow Investigation (Smoke testing)	47,000	-	47,000	-	-	-	-	-	-	-	-
Water and Wastewater Master Servicing Study	16,000	-	-	16,000	-	-	-	-	-	-	-
Total Capital Expenditures	**2,065,000**	**89,000**	**77,000**	**122,000**	**54,000**	**525,000**	**20,000**	**-**	**78,000**	**1,100,000**	**-**
Capital Financing											
Provincial/Federal Grants	-										
Development Charges Reserve Fund	63,000	-	47,000	16,000	-	-	-	-	-	-	-
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Operating Contributions	-	-	-	-	-	-	-	-	-	-	-
Lifecycle Reserve Fund	1,106,000	89,000	30,000	106,000	54,000	525,000	20,000	-	19,000	263,000	-
Wastewater Capital Reserve	896,000	-	-	-	-	-	-	-	59,000	837,000	-
Total Capital Financing	**2,065,000**	**89,000**	**77,000**	**122,000**	**54,000**	**525,000**	**20,000**	**-**	**78,000**	**1,100,000**	**-**

Table F-3
Township of Guelph/Eramosa
Schedule of Non-Growth Related Debenture Repayments (Inflated $)

Debenture Year	Forecast									
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2021		-	-	-	-	-	-	-	-	-
2022			-	-	-	-	-	-	-	-
2023				-	-	-	-	-	-	-
2024					-	-	-	-	-	-
2025						-	-	-	-	-
2026							-	-	-	-
2027								-	-	-
2028									-	-
2029										-
2030										
Total Annual Debt Charges	-	-	-	-	-	-	-	-	-	-

Table F-4
Township of Guelph/Eramosa
Schedule of Growth-Related Debenture Repayments (Inflated $)

Debenture Year	Forecast									
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2021		-	-	-	-	-	-	-	-	-
2022			-	-	-	-	-	-	-	-
2023				-	-	-	-	-	-	-
2024					-	-	-	-	-	-
2025						-	-	-	-	-
2026							-	-	-	-
2027								-	-	-
2028									-	-
2029										-
2030										
Total Annual Debt Charges	-	-	-	-	-	-	-	-	-	-

Table F-5
Township of Guelph/Eramosa
Wastewater Operating Reserve Continuity (Inflated $)

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	23,564	23,564	23,564	23,564	23,564	23,564	23,564	23,564	23,564	23,564
Transfer from Operating	-	-	-	-	-	-	-	-	-	-
Transfer to Capital	-	-	-	-	-	-	-	-	-	-
Transfer to Lifecycle Reserve - Loan Repayment	-	-	-	-	-	-	-	-	-	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Closing Balance	**23,564**	**23,564**	**23,564**	**23,564**	**23,564**	**23,564**	**23,564**	**23,564**	**23,564**	**23,564**
Interest										

Table F-6
Township of Guelph/Eramosa
Wastewater Capital Reserve Fund Continuity (Inflated $)

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	742,692	941,093	1,172,499	1,413,567	1,657,799	1,926,844	2,224,414	2,531,414	2,786,862	2,252,492
Transfer from Operating	176,524	204,149	208,208	205,693	224,253	245,859	248,153	249,663	250,266	250,036
Transfer to Capital								59,000	837,000	
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Closing Balance	**919,216**	**1,145,242**	**1,380,706**	**1,619,260**	**1,882,051**	**2,172,703**	**2,472,567**	**2,722,077**	**2,200,128**	**2,502,527**
Interest	21,877	27,257	32,861	38,538	44,793	51,710	58,847	64,785	52,363	59,560

Table F-7
Township of Guelph/Eramosa
Wastewater Development Charges Reserve Fund Continuity (Inflated $)

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	(27,011)	624,673	898,172	981,258	925,604	1,697,306	(62,244)	63,387	193,342	292,150
Development Charge Proceeds	775,407	437,588	215,722	61,396	871,674	63,877	65,154	66,457	33,013	33,674
Transfer from Operating (from Rockwood Water D.C. Reserve Fund)	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003
Transfer to Capital	-	47,000	16,000	-	-	-	-	-	-	-
Transfer to Operating (to Water Rockwood DC Reserve Fund)										
Transfer to Capital Related Operating	197,248	196,971	198,451	197,571	198,432	1,880,982	-	-	-	-
Closing Balance	**610,151**	**877,293**	**958,447**	**904,086**	**1,657,849**	**(60,797)**	**61,914**	**188,848**	**285,359**	**384,827**
Interest	14,522	20,880	22,811	21,517	39,457	(1,447)	1,474	4,495	6,792	9,159
Required from Development Charges	-	47,000	16,000	-	-	-	-	-	-	-

Table F-8
Township of Guelph/Eramosa
Wastewater Lifecycle Reserve Fund Continuity (Inflated $)

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	1,050,636	1,189,283	1,391,633	1,520,992	1,706,666	1,414,550	1,632,500	1,876,113	2,106,073	2,091,698
Transfer from Operating	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Transfer from Operating Reserve - Loan Repayment	-	-	-	-	-	-	-	-	-	-
Transfer to Capital	89,000	30,000	106,000	54,000	525,000	20,000	-	19,000	263,000	-
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Closing Balance	**1,161,636**	**1,359,283**	**1,485,633**	**1,666,992**	**1,381,666**	**1,594,550**	**1,832,500**	**2,057,113**	**2,043,073**	**2,291,698**
Interest	27,647	32,351	35,358	39,674	32,884	37,950	43,613	48,959	48,625	54,542

Table F-9
Township of Guelph/Eramosa
Wastewater Operating Budget Forecast (Inflated $)

Description	Forecast									
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Expenditures										
Operating Costs										
Communications	4,200	4,280	4,370	4,460	4,550	4,640	4,730	4,820	4,920	5,020
Conservation Initiatives	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Fees - Engineering	11,000	11,220	11,440	11,670	11,900	12,140	12,380	12,630	12,880	13,140
Fees - Legal	500	500	500	500	500	500	500	500	500	500
Fleet	5,000	5,500	5,610	5,720	5,830	5,950	6,070	6,190	6,310	6,440
Grounds Maintenance	2,000	2,000	2,000	2,000	2,000	2,500	2,500	2,500	2,500	2,500
Heating	1,000	1,020	1,040	1,060	1,080	1,100	1,120	1,140	1,160	1,180
Hydro	46,000	46,920	47,860	48,820	49,800	50,800	51,820	52,860	53,920	55,000
Insurance	30,740	32,580	34,530	36,600	38,800	41,130	43,600	46,220	48,990	51,930
Licenses	500	500	500	500	500	500	500	500	500	500
Memberships and Dues	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Contracted Services	3,500	3,500	3,570	3,640	3,710	3,780	3,860	3,940	4,020	4,100
Property Taxes	6,996	7,136	7,279	7,424	7,573	7,724	7,880	8,040	8,200	8,360
Repairs & Maint - Building	4,000	4,000	4,080	4,160	4,240	4,320	4,410	4,500	4,590	4,680
Repairs & Maint - Equipment	33,000	30,000	30,600	31,210	31,830	32,470	33,120	33,780	34,460	35,150
Repairs & Maint - Water/WW Mains	30,000	30,000	30,600	31,210	31,830	32,470	33,120	33,780	34,460	35,150
Safety	1,500	1,500	1,500	1,500	1,530	1,560	1,590	1,620	1,650	1,680
Salaries and Wages	204,000	209,000	217,000	226,000	230,520	235,130	239,830	244,630	249,520	254,510
Salaries Benefits	66,000	67,000	70,000	73,000	74,460	75,950	77,470	79,020	80,600	82,210
Seminars and Training	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000	4,000
Service Agreements	1,000	1,000	1,020	1,040	1,060	1,080	1,100	1,120	1,140	1,160
Supplies and Services	55,000	56,100	57,200	58,300	59,500	60,700	61,900	63,100	64,400	65,700
Uniforms	700	750	770	790	810	830	850	870	890	910
W/W Treatment City of Guelph	550,000	566,500	583,500	601,010	619,040	637,610	656,740	676,440	696,730	717,630
Indirect Costs Transfer	16,450	17,350	18,242	19,130	20,025	20,910	21,330	21,760	22,200	22,640
Sub Total Operating	**1,079,086**	**1,104,356**	**1,139,211**	**1,175,744**	**1,207,088**	**1,239,794**	**1,272,420**	**1,305,960**	**1,340,540**	**1,376,090**
Capital-Related										
Existing Debt (Principal) - Growth Related	138,000	140,000	144,000	146,000	150,000	1,836,000	-	-	-	-
Existing Debt (Interest) - Growth Related	59,248	56,971	54,451	51,571	48,432	44,982	-	-	-	-
New Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Existing Debt (Principal) - Non-Growth Related										
Existing Debt (Interest) - Non-Growth Related										
New Non-Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Transfer to Capital	-	-	-	-	-	-	-	-	-	-
Transfer to Capital Reserve	176,524	204,149	208,208	205,693	224,253	245,859	248,153	249,663	250,266	250,036
Transfer to Rockwood Water D.C. Reserve										
Transfer to Wastewater D.C. Reserve Fund	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003
Transfer to Rockwood Wastewater Lifecycle Reserve (Loan Repayment)										
Sub Total Capital Related	**432,775**	**460,123**	**465,662**	**462,267**	**481,688**	**2,185,844**	**307,156**	**308,666**	**309,270**	**309,039**
Total Expenditures	**1,511,861**	**1,564,479**	**1,604,872**	**1,638,011**	**1,688,776**	**3,425,638**	**1,579,576**	**1,614,626**	**1,649,810**	**1,685,129**

Table F-9 (Cont'd)
Township of Guelph/Eramosa
Wastewater Operating Budget Forecast (Inflated $)

Description	Forecast									
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Revenues										
Base Charge	276,396	286,246	293,625	300,200	309,788	319,639	326,032	332,552	339,203	345,987
Penalty and Interest	4,828	4,924	5,023	5,123	5,226	5,330	5,437	5,545	5,656	5,770
Miscellaneous Revenue	1,530	1,561	1,592	1,624	1,656	1,689	1,723	1,757	1,793	1,828
Contributions from DC Reserve Fund	197,248	196,971	198,451	197,571	198,432	1,880,982	-	-	-	-
Contributions from Capital Reserve Fund										
Contributions from Lifecycle Reserve Fund										
Contributions from Contingency Reserve Fund										
Contributions from Water D.C. Reserve Fund	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003	59,003
Contributions from Wastewater D.C. Reserve Fund (interim loan from Wastewater D.C. Reserve Fund)										
Total Operating Revenue	**539,004**	**548,705**	**557,693**	**563,521**	**574,104**	**2,266,643**	**392,195**	**398,858**	**405,655**	**412,589**
Wastewater Billing Recovery - Operating	**972,857**	**1,015,774**	**1,047,179**	**1,074,491**	**1,114,671**	**1,158,995**	**1,187,381**	**1,215,768**	**1,244,154**	**1,272,540**
Lifecycle Reserve Contribution ($)	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
Wastewater Billing Recovery - Total	**1,172,857**	**1,215,774**	**1,247,179**	**1,274,491**	**1,314,671**	**1,358,995**	**1,387,381**	**1,415,768**	**1,444,154**	**1,472,540**

Table F-10
Township of Guelph/Eramosa
Wastewater Rate Forecast

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total Wastewater Billing Recovery	1,172,857	1,215,774	1,247,179	1,274,491	1,314,671	1,358,995	1,387,381	1,415,768	1,444,154	1,472,540
Total Volume (m^3)	337,999	343,439	345,479	346,329	350,579	354,829	354,829	354,829	354,829	354,829
Constant Rate	**3.47**	**3.54**	**3.61**	**3.68**	**3.75**	**3.83**	**3.91**	**3.99**	**4.07**	**4.15**
Annual Dollar Change	**0.07**	**0.07**	**0.07**	**0.07**	**0.07**	**0.08**	**0.08**	**0.08**	**0.08**	**0.08**

Appendix G
Detailed Water & Wastewater Rate Calculations – Gazer-Mooney

Appendix G: Detailed Water & Wastewater Rate Calculations – Gazer-Mooney

Table G-1
Township of Guelph/Eramosa
Capital Budget Forecast (Uninflated $)

Description	Total	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Lifecycle:	-										
Gazer Mooney Wastewater Facilities	329,140										329,140
Total Capital Expenditures	**329,140**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**329,140**

Table G-2
Township of Guelph/Eramosa
Capital Budget Forecast (Inflated $)

Description	Total	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Lifecycle:											
Gazer Mooney Wastewater Facilities	401,000	-	-	-	-	-	-	-	-	-	401,000
Total Capital Expenditures	**401,000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**401,000**
Capital Financing											
Provincial/Federal Grants	-										
Non-Growth Related Debenture Requirements	-	-	-	-	-	-	-	-	-	-	-
Gazer-Mooney Lifecycle Reserve Fund	401,000	-	-	-	-	-	-	-	-	-	401,000
Total Capital Financing	**401,000**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**401,000**

Table G-3
Township of Guelph/Eramosa
Schedule of Non-Growth Related Debenture Repayments (Inflated $)

Debenture Year	Principal (Inflated)	Forecast									
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
2021	-		-	-	-	-	-	-	-	-	-
2022	-			-	-	-	-	-	-	-	-
2023	-				-	-	-	-	-	-	-
2024	-					-	-	-	-	-	-
2025	-						-	-	-	-	-
2026	-							-	-	-	-
2027	-								-	-	-
2028	-									-	-
2029	-										-
2030	-										
Total Annual Debt Charges	**-**	-	-	-	-	-	-	-	-	-	-

Table G-4
Township of Guelph/Eramosa
Gazer-Mooney Water & Wastewater Lifecycle Reserve Fund Continuity (Inflated $)

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Opening Balance	370,604	403,876	438,428	474,302	511,538	550,180	590,271	631,855	674,981	719,695
Transfer from Operating	23,883	24,360	24,848	25,345	25,852	26,369	26,896	27,434	27,983	28,543
Transfer to Capital	-	-	-	-	-	-	-	-	-	401,000
Transfer to Operating	-	-	-	-	-	-	-	-	-	-
Closing Balance	**394,487**	**428,236**	**463,276**	**499,647**	**537,390**	**576,549**	**617,167**	**659,290**	**702,964**	**347,237**
Interest	9,389	10,192	11,026	11,892	12,790	13,722	14,689	15,691	16,731	8,264

Table G-5
Township of Guelph/Eramosa
Gazer-Mooney Operating Budget Forecast (Inflated $)

Description	Forecast									
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Expenditures										
Operating Costs	-	-	-	-	-	-	-	-	-	-
Hydro	3,675	3,859	4,052	4,254	4,467	4,690	4,925	5,171	5,430	5,701
Sub Total Operating	**3,675**	**3,859**	**4,052**	**4,254**	**4,467**	**4,690**	**4,925**	**5,171**	**5,430**	**5,701**
Capital-Related										
Existing Debt (Principal) - Non-Growth Related										
Existing Debt (Interest) - Non-Growth Related										
New Non-Growth Related Debt (Principal)	-	-	-	-	-	-	-	-	-	-
New Non-Growth Related Debt (Interest)	-	-	-	-	-	-	-	-	-	-
Transfer to Gazer-Mooney Lifecycle Reserve Fund	-	-	-	-	-	-	-	-	-	-
Sub Total Capital Related	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Total Expenditures	**3,675**	**3,859**	**4,052**	**4,254**	**4,467**	**4,690**	**4,925**	**5,171**	**5,430**	**5,701**
Revenues										
Miscellaneous Revenue	3,675	3,859	4,052	4,254	4,467	4,690	4,925	5,171	5,430	5,701
Total Operating Revenue	**3,675**	**3,859**	**4,052**	**4,254**	**4,467**	**4,690**	**4,925**	**5,171**	**5,430**	**5,701**
Water Billing Recovery - Operating	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Lifecycle Reserve Contribution ($)	23,883	24,360	24,848	25,345	25,852	26,369	26,896	27,434	27,983	28,543
Water Billing Recovery - Total	**23,883**	**24,360**	**24,848**	**25,345**	**25,852**	**26,369**	**26,896**	**27,434**	**27,983**	**28,543**

Table G-6
Township of Guelph/Eramosa
Gazer-Mooney Water & Wastewater Rate Forecast

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Total Water Billing Recovery	23,883	24,360	24,848	25,345	25,852	26,369	26,896	27,434	27,983	28,543
Total Customers	71	71	71	71	71	71	71	71	71	71
Annual Flat Rate	**336.38**	**343.10**	**349.97**	**356.97**	**364.11**	**371.39**	**378.82**	**386.40**	**394.13**	**402.01**
Annual Dollar Change	**6.60**	**6.73**	**6.87**	**7.00**	**7.14**	**7.28**	**7.43**	**7.58**	**7.73**	**7.88**